



The San José State University's Academic Catalog is the official source for the university's Mission and Institutional Learning Goals, Academic Policies and Procedures, Majors and Programs (including lists of major start terms and CIP codes and discontinued majors), and Course Descriptions. Students are encouraged to utilize the catalog in planning their path to graduation.

Catalog Resources: [Disclaimer](#) | [Icon Guide](#) | [Video Tutorial](#)

About SJSU

Message from the President
San José State University
The California State University
Programs and Services
Faculty & Administration

Past Catalogs

Are you looking for a different catalog? Visit the Archived Catalogs section to view past catalogs.

What's New?

For a list of changes to programs and policies and new courses and programs in the academic catalog, visit the What's New? Page.

What are Catalog Rights?

Undergraduate Students

Students may elect to satisfy degree requirements for a different academic catalog year for their major and/or their Undergraduate University Graduation Requirements. Talk to your advisor about your Undergraduate Catalog Rights.

Graduate Students

Students, who since gaining Classified Graduate Standing status have maintained continuous enrollment, may elect to satisfy the degree requirements in effect at the time of gaining Classified Graduate Standing status or at the time of completing their degree requirements.

[MyProgress](#) | [MyRoadmap](#) | [MyPlanner](#) | [MyScheduler](#)

MyGPS: Graduation Pathway to Success

A suite of technology tools available to help you plan.

Check out California Promise, a program to help frosh graduate in four years and transfers in two.

What's New?

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Organizational Changes

- College of Information, Data & Society (formerly College of Professional and Global Education)
- Professional & Global Engagement (formerly College of Professional and Global Education)

Programs

New Degrees (3)

- Asian American Studies, BA
- Computational Linguistics, MS
- Geographic Information Science (GISc), MS (Accepting Students for Fall 2025)

New Minors (3)

- Energy Systems Minor
- Spanish Language Media and Journalism Minor
- Sustainability Minor

New Certificates (4)

- Advanced Social Work Practice in Gerontology Certificate
- Advanced Social Work Practice in Mental Health Certificate
- Clinical Genetic Molecular Biologist Scientist Training Program Certificate
- Innovation & Entrepreneurship Certificate

New Credentials (1)

- PK-3 Early Childhood Education (PK-3 ECE) Specialist Instruction Credential

Major Program Revisions (6)

- Accounting and Analytics, MS (formerly Accountancy, MS)
- Biological Sciences - Marine Biology, BS

- Business Administration, Accounting Concentration, BS + Accounting and Analytics, MS (formerly Business Administration, Accounting Concentration, BS + Accountancy, MS)
- Communicative Disorders and Sciences, BS (formerly Communicative Disorders and Sciences, BA)
- Clinical Psychology, MS (formerly Clinical Mental Health Counseling, MS)
- History Minor (formerly General History Minor)

General Education Program

Area A1: Oral Communication

- HUM 10 - Honors Global Oral and Rhetorical Cultures (A1)

Area A3: Critical Thinking and Writing

- HUM 11 - Honors Critical Thinking across Global Cultures (A3)

Area B4: Mathematics/Quantitative Reasoning

- ESM 19 - Precalculus (B4)
- ESM 26 - Quantitative Reasoning in Linguistic Diversity (B4)

Area C1: Arts

- ENGL 71 - Creative Writing (C1) (formerly C2)
- HUM 20 - Honors Global Material Cultures (C1)

Area C2 - Humanities

- HEBR 1A - Elementary Hebrew (C2)
- HEBR 1B - Elementary Hebrew (C2)
- HUM 21 - Honors Reading Difference across Global Cultures (C2)
- JWSS 1A - Elementary Hebrew (C2)
- JWSS 1B - Elementary Hebrew (C2)
- RELS 1A - Elementary Hebrew (C2)
- RELS 1B - Elementary Hebrew (C2)

Area F: Ethnic Studies

- NAIS 1 - Intro to Native American and Indigenous Studies (F)
- NAIS 2 - California Indigenous Peoples (F)

Area R: Earth, Environment, and Sustainability

- AFAM 151 - Race, Class and the Environment (R) (Spring 2025)
- ENVS 151 - Race, Class and the Environment (R) (Spring 2025)
- JOUR 160 - Environmental Journalism (R)

Area S: Self, Society & Equality in the U.S.

- AFAM 152 - Black Feminisms (S)
- AFAM 159 - The Racial Wealth Gap in America (S)
- AFAM 170 - Interracial Intimacies and Mixed Race Identity in the U.S. (S)
- NUFS 134 - Multicultural Complementary and Alternative Medicine (S)

Area V: Cultures and Global Understanding

- HIST 118 - Yiddish History and Culture (V)
- JWSS 118 - Yiddish History and Culture (V)
- MCOM 118 - Metaverse, Society and World-Building (V)

- RTVF 111 - Global Screen Cultures (V)

Graduation Writing Assessment Requirement (GWAR)

- DATA 245 - Machine Learning Technologies (GWAR)

Spartan Accelerated Graduate Education (SAGE) Scholars Programs (7)

Spartan Accelerated Graduate Education (SAGE) Scholars programs are combined bachelor's and master's programs at SJSU (per University Policy F19-1). Sometimes they may also satisfy the requirements for a credential. Students in these programs pursue a bachelor's and master's degree simultaneously. These programs allow students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

- Business Administration, Finance Concentration, BS + Finance, MS *Pending final approval from the CSU Chancellor's Office*
- Economics, BA + Economics, Applied Economics Concentration, MA
- Economics, BA + Economics, MA
- Economics, BS + Economics, Applied Economics Concentration, MA
- Economics, BS + Economics, MA
- Industrial and Systems Engineering BS + Industrial and Systems Engineering, Concentration in Operational Analytics, MS
- Mathematics, Integrated Teacher Education Program, BA + Single Subject Credential + Education Specialist Credential + Special Education, MA

SJSU Online (1)

- Interdisciplinary Studies, Health Care Leadership Concentration, BS (SJSU Online)

New Courses (117)

Effective Fall 2024 (unless otherwise indicated).

Business

- BUS 227G - Tax Compliance & Planning (TCP) (*Spring 2025*)
- BUS 244 - Information Technologies for Business: Essentials & Emerging
- BUS 270S - Special Topics in Finance
- BUS2 135C - Entertainment Marketing (*Spring 2024*)
- BUS2 135D - Sports Marketing (*Spring 2024*)
- BUS3 184N - Business Network Experience
- BUS4 118A - Cloud Computing for Data Professionals
- HSPM 155 - Sustainable Hospitality and Tourism Management (*Spring 2024*)

Education

- CHAD 264 - Seminar in Family Systems (*Spring 2024*)
- CHAD 274 - Seminar in Middle Childhood and Adolescent Development (*Spring 2024*)
- EDD 590 - Research Seminar and Colloquium in Educational Leadership (*Spring 2024*)
- EDD 598 - Dissertation Research Development (*Spring 2024*)

- EDLD 11 - Making Research Work: Explorations in Career Pathways (*Spring 2024*)
- EDTE 208A - Culture, Education and Power for Spanish-English Bilinguals
- EDTE 208M - Culture, Education and Power for Mandarin-English Bilinguals
- EDTE 262A - Language Methods and Equity for Spanish-English Bilinguals
- EDTE 262M - Language Methods and Equity for Mandarin-English Bilinguals
- EDTE 297A - Advanced Issues in Spanish-English Bilingual Education (*Spring 2024*)

Engineering

- AE 105 - Mathematical Methods for Aerospace Engineers
- AE 119 - Finite Element Analysis for Aerospace Applications (*Spring 2024*)
- AVIA 129 - Aviation Cybersecurity (*Spring 2024*)
- AVIA 160 - Aircraft Dispatch (*Spring 2025*)
- CHE 282 - Applied Graduate Research
- CHE 283C - Graduate Curricular Practical Training
- CMPE 217 - Human AI Interaction
- CMPE 219 - Cybersecurity Clinics with HCI
- CMPE 297 - Special Topics in Computer/Software Engineering (*Spring 2024*)
- ISE 216 - Service Design: Process and Methods
- ISE 295C - Graduate Curricular Practical Training
- MATE 146 - Experimental Methods in Materials Characterization
- MATE 282 - Applied Graduate Research
- MATE 283C - Graduate Curricular Practical Training
- TECH 242 - Vision System Application in Manufacturing

Health and Human Sciences

- AUD 526C - Clinical Externship in Audiology III (*Spring 2024*)
- HS 90 - Introduction to Health Science Professions
- HS 110 - Interprofessional Health Teams (*Spring 2025*)
- KIN 276 - Advanced Exercise Psychology
- OCTH 201AD - Field Work Experience
- OCTH 201BD - Advanced Field Work Experience
- OCTH 206D - Clinical Practice Skills for Occupational Therapy
- OCTH 210D - Seminar in Occupational Therapy
- OCTH 210ITLD - Seminar in Occupational Therapy: International Experience
- OCTH 211D - Historical and Theoretical Foundations of Occupational Therapy
- OCTH 212D - Occupations through the Lifespan
- OCTH 221D - Occupational Analysis
- OCTH 222D - Functional Kinesiology for Occupational Therapists
- OCTH 245D - Introduction to Research Methods (*GWAR*)
- OCTH 276D - Practicum and Seminar 1A
- OCTH 286D - Practicum and Seminar 1B

Humanities and the Arts

- ADV 127 - Practical Qualitative Research in Advertising
- ART 15 - Digital 2D Foundations
- ARTH 150 - Modern Textiles: A Global History of Art and Design (*Spring 2025*)
- DSGN 101 - Design Thinking Studio
- ENGL 160 - Topics in American Literature
- ENGL 171 - Pop Cultures
- HEBR 1A - Elementary Hebrew (C2)
- HEBR 1B - Elementary Hebrew (C2)
- HUM 10 - Honors Global Oral and Rhetorical Cultures (A1)
- HUM 11 - Honors Critical Thinking across Global Cultures (A3) (*Spring 2025*)
- HUM 20 - Honors Global Material Cultures (C1)
- HUM 21 - Honors Reading Difference across Global Cultures (C2) (*Spring 2025*)
- JOUR 140AS - Student Media Production in Spanish
- JOUR 160 - Environmental Journalism (R)
- JPN 170 - Japanese Language Proficiency Test (JLPT) Preparation (*Spring 2024*)
- JWSS 1A - Elementary Hebrew (C2)
- JWSS 1B - Elementary Hebrew (C2)
- LING 220 - Computational Linguistics I (*Spring 2024*)
- LING 221 - Computational Linguistics II (*Spring 2024*)
- MCOM 94 - Sport, Communication and Society
- MCOM 118 - Metaverse, Society and World-Building (*Spring 2025*)
- MCOM 172 - Introduction to Spanish Language Media and Journalism
- MUSC 10BK - Class Piano for Non-Majors
- MUSC 60S - ModLark - Mobile Device and Laptop Orchestra (Intro. Level)
- MUSC 66A - Mariachi San José
- MUSC 166A - Mariachi San Jose
- MUSC 266A - Mariachi San Jose
- RELS 1A - Elementary Hebrew (C2)
- RELS 1B - Elementary Hebrew (C2)
- RTVF 22 - KSJS Radio Programming & Production
- RTVF 23 - Podcasting For Radio and Digital Media
- RTVF 83 - Digital Media Impact and Analysis

College of Information, Data & Society

- DATA 201 - Database Technologies for Data Analytics
- DATA 202 - Mathematics for Applied Data Science
- DATA 226 - Data Warehouse and Pipeline
- DATA 236 - Distributed Systems for Data Engineering
- DATA 265 - Large Language Model Applications
- DATA 266 - Generative Model Applications
- IDT 201 - Introduction: Instructional Systems & Learning Technologies (*Spring 2025*)
- IDT 202 - Systematic Design: Instruction & Human Performance (*Spring 2025*)
- IDT 203 - Trends and Issues in Instructional Design and Human Perf (*Spring 2025*)
- IDT 204 - Theories of Teaching, Learning, and Human Cognition
- IDT 205 - Learning Design and Technologies (*Spring 2025*)
- IDT 206 - Advanced Instructional Design and Development (*Spring 2025*)

- IDT 207 - Learning Analytics and Data-Driven Evaluation and Assessment (*Spring 2025*)
- IDT 298 - Capstone Applied Project and e-Portfolio (*Spring 2025*)
- ISDA 160 - User Experience (UX) Research and Design

Science

- CS 148 - Applied Algorithms II
- CS 273 - Topics in Natural Language Processing (*Spring 2024*)
- MICR 293 - CGMBS Lab Management (*Spring 2024*)

Social Sciences

- AAS 158 - Asian American Intersections
- AAS 184 - Ethnic Studies Theory
- AFAM 170 - Interracial Intimacies and Mixed Race Identity in the U.S. (*S*)
- CCS 190 - Chicana and Chicano Studies Capstone (*Spring 2024*)
- FS 172 - Practical Forensic Microscopy
- FS 174 - Forensic Taphonomy and the Depositional Environment
- GISC 205 - Spatial Data Literacy and Ethics (*GWAR*)
- GISC 210 - Spatial Data Science Through Open-Source GIS Technologies
- GISC 220 - Spatial Statistics, Analysis, & Modeling
- GISC 298A - Master Report 1: Final Project Research Design
- HIST 118 - Yiddish History and Culture (*V*)
- JS 213 - Seminar in Cybercrime (*Spring 2024*)
- JS 224 - Seminar in Reproductive Justice (*Spring 2024*)
- JWSS 118 - Yiddish History and Culture (*V*)
- NAIS 1 - Intro to Native American and Indigenous Studies (*F*)
- NAIS 2 - California Indigenous Peoples (*F*)

Undergraduate Education

- ESM 19 - Precalculus (*B4*)
- ESM 26 - Quantitative Reasoning in Linguistic Diversity (*B4*)

Message from the President

Dear Spartans,

Welcome to the 2024-2025 academic year at San José State University!

Whether you are taking the first step toward building a career or simply seeking personal enrichment, this catalog is designed to help you find the courses that will advance your educational journey. SJSU offers degrees in more than 140 majors at the bachelor's level, as well as in nearly 100 fields of graduate study. The university also awards four different doctoral degrees and hosts a variety of credential, certificate and other programs. Whatever your interest, we have the classes that will help you achieve your goals.

College is more than classes, of course, and I want you to get the most out of your time at SJSU. Here are some ways to make your time here successful and special.

- Find your fit and make new friends by exploring the 400+ recognized student groups (RSOs) that span a wide range of interests and topics.
- Watch for interesting and entertaining events on the Sammy App and the Events Calendar on our university homepage.
- Talk to your instructors about the hands-on learning opportunities available to undergraduates across all of our colleges. Many of these activities occur outside the classroom and provide the real-world experience employers are looking for.
- Leverage the expertise and resources of your college-based Student Success Center or, if you are still considering which major to pursue, visit the Exploratory Student Success Center on the first floor of the Administration Building.
- Take advantage of late-night tutoring at the Dr. Martin Luther King, Jr. Library, which you can access in-person or online.
- If you find yourself confronting an unexpected financial, food or housing emergency, reach out to SJSU Cares online or by stopping by the office on the first floor of Clark Hall.

You are about to embark on a new year of self-discovery, learning, engagement and belonging with your fellow Spartans. I look forward to soon adding your name to our growing list of notable Spartan alumni making a difference locally and globally.

It's great to have you here at SJSU!

Sincerely,

Dr. Cynthia Teniente-Matson
President

The California State University

The California State University (CSU) is the nation's largest and most diverse four-year public university. With 23 unique universities and seven off-campus centers, the CSU serves more than 450,000 students and employs more than 63,000 faculty and staff.

Each year, the university awards nearly 127,000 degrees, changing the trajectory of students' lives by opening doors to opportunities for upward mobility. Nearly one-third of CSU students are the first in their families to attend college and more than half of CSU students are from traditionally underrepresented backgrounds.

For one of the most affordable tuitions in the country, students learn from world-class faculty, gain valuable hands-on experiences and receive strong career advising, empowering them to become leaders in the changing workforce.

CSU graduates are serving as leaders in the industries that drive California's economy, including business, agriculture, entertainment, engineering, teaching, hospitality and health care. To learn more, visit the California State University website.

A Tradition of Excellence for More than Six Decades

Since 1961, the CSU has provided an affordable, accessible, and high-quality education to millions of Californians. While each university is unique based on its curricular specialties, location and culture, every CSU is distinguished for the quality of its educational programs. All CSUs are fully accredited, provide a high-quality broad liberal educational program and offer opportunities for students to engage in university life through the Associated Students, Inc., clubs and service learning.

Facts

- Today, one in every 20 Americans with a college degree is a CSU graduate.
- 1 in every 10 employees in California is a CSU graduate.
- The CSU's network of more than 4 million alumni is larger than the population of 23 U.S. states.
- The CSU awards nearly half of the bachelor's degrees earned in California.
- The CSU awards more than one-quarter of California's baccalaureate nursing degrees.
- Between 2017 and 2022, the CSU prepared more of California's teachers than any other state institution.
- About four percent of the nation's teachers graduate from the CSU.
- In 2022-23, CSU students earned nearly 20,000 undergraduate business degrees and more than 7,300 engineering degrees.
- The CSU offers more than 4,000 degree programs that align with the state's workforce demands.
- The CSU's online concurrent enrollment program gives students the ability to enroll in courses offered by other universities in the CSU system.
- Through CSU community engagement centers, 33,765 students participated in service-learning, contributing more than 656,000 hours of service in 2022-23.

Governance

The CSU is governed by the Board of Trustees, most of whom are appointed by the governor and serve with faculty and student representatives. The CSU Chancellor is the chief executive officer, reporting to the Board. The presidents serve as the university-level chief executive officers. The Trustees, Chancellor and presidents develop university-wide educational policy. The presidents, in consultation with the CSU Academic Senate and other university stakeholder groups, render and implement local policy decisions.

CSU Historical Milestones

The individual California State Colleges were established as a system with a Board of Trustees and a chancellor in 1960 by the Donahoe Higher Education Act. In 1972, the system was designated as the California State University and Colleges, and in 1982 the system became the California State University (CSU). Today, the CSU is comprised of 23 member universities, including comprehensive and polytechnic universities and, since July 1995, the California State University Maritime Academy, a specialized university.

The oldest university - San José State University - was founded in 1857 and became the first institution of public higher education in California. The newest - California State University Channel Islands - opened in fall 2002, with freshmen arriving in fall 2003. And in 2022, the CSU in Humboldt became California State Polytechnic University, Humboldt, joining San Luis Obispo and Pomona as the state's third public polytechnic university.

In 1963, the CSU's Academic Senate was established to act as the official voice of CSU faculty in university-wide matters. Also, the California State College Student Presidents Association - which was later renamed the California State Student Association (CSSA), was founded to represent each university student association on issues affecting students.

Through its many decades of service, the CSU has continued to adapt to address societal changes, student needs and workforce trends. While the CSU's core mission has always focused on providing high-quality, affordable bachelor's and master's degree programs, over time the university has added a wide range of services and programs to support student success - from adding health centers and special programs for veterans to building student residential facilities to provide a comprehensive educational experience.

In 2010, in an effort to accommodate community college transfer students, the CSU, in concert with the California Community Colleges (CCC), launched the Associate Degree for Transfer (ADT), which guarantees CCC transfer students with an ADT admission to the CSU with junior status. The ADT has since proven to be one of the most effective paths to a CSU for community college transfer students. In 2023, the CSU launched the Transfer Success Pathway program to guarantee future CSU admission to high school graduates who are entering a California community college and who commit to transferring within three years.

Always adapting to changes in technology to support student learning and degree completion, the CSU launched CSU Fully Online, which enables CSU students to complete online courses at other CSUs, expanding enrollment opportunities and providing more educational opportunities for students who may prefer an online format to a traditional classroom setting.

The CSU marked a significant educational milestone when it broadened its degree offerings to include professional doctoral degrees. The CSU independently offers Doctor of Education (Ed.D.), Doctor of Physical Therapy (DPT), Doctor of Audiology (AuD), Doctor of Nursing Practice (DNP) and Doctor of Occupational Therapy (OTD) degree programs. Additionally, the CSU was recently authorized to offer the independent Doctor of Public Health (DrPH). A limited number of other doctoral degrees are offered jointly with the University of California and private institutions in California.

The CSU strives to continually develop innovative programs, services and opportunities that will give students the tools they need to meet their full potential. In 2015, the CSU system launched Graduation Initiative 2025, a bold plan to support students, increase the number of California's graduates earning high-quality degrees and eliminate achievement and equity gaps for all students. Through this initiative, the CSU is ensuring that all students have the opportunity to graduate according to their personal goals, positively impacting their lives, families and communities.

By providing an accessible, hands-on education that prepares graduates for career success, the CSU has created a network of alumni so extensive and renowned that it spans across the globe. More than 4 million CSU alumni are making a difference in the lives of the people of California and the world.

Trustees of the CSU

Ex Officio Trustees

The Honorable Gavin Newsom
Governor of California

The Honorable Eleni Kounalakis
Lieutenant Governor of California

The Honorable Robert Rivas
Speaker of the Assembly

The Honorable Tony Thurmond
State Superintendent of Public Instruction

Dr. Mildred Garcia
Chancellor, California State University

Officers of the Trustees

The Honorable Gavin Newsom - President
Lillian Kimbell - Chair
Wenda Fong - Vice Chair
Andrew Jones - Secretary
Steve Relyea - Treasurer

Appointed Trustees

Appointments are for a term of eight years, except student, alumni, and faculty trustees whose terms are for two years. Terms expire in the year in parentheses. Names are listed alphabetically.

Larry L. Adamson (2026)
Diana Aguilar-Cruz (2024)
Diego Arambula (2028)
Raji Brar (2029)
Jack B. Clarke Jr. (2027)
Douglas Faigin (2025)
Jean P. Firstenberg (2026)
Wenda Fong (2024)
Mark Ghilarducci (2031)
Leslie Gilbert-Lurie (2030)
Lillian Kimbell (2024)
Julia I. Lopez (2028)
Jonathan Molino Mancio (2025)
John "Jack" McGrory (2023)
Anna Ortiz-Morfit (2025)
Yammilette Rodriguez (2029)
Lateefah Simon (2027)
Christopher J. Steinhauser (2026)
Jose Antonio Vargas (2030)
Darlene Yee-Melichar (2025)

Correspondence with trustees should be sent to: c/o Trustees Secretariat, The California State University, 401 Golden Shore, Long Beach, California 90802-4210.

Office of the Chancellor

The California State University

401 Golden Shore
Long Beach, California 90802-4210
(562) 951-4000

Dr. Mildred García - Chancellor
Mr. Steve Relyea - Executive Vice Chancellor and Chief Financial Officer
Mr. Andrew Jones - Executive Vice Chancellor, General Counsel
Ms. Leora D. Freeman - Vice Chancellor, Human Resources
Mr. Vlad Marinescu - Vice Chancellor and Chief Audit Officer
Mr. Greg Saks - Vice Chancellor, External Relations and Communications
Dr. Nathan Evans - Deputy Vice Chancellor, Academic and Student Affairs, Chief Academic Officer
Dr. Dilcie Perez - Deputy Vice Chancellor, Academic and Student Affairs, Chief Student Affairs Officer
Ms. Danielle Garcia - Associate Vice Chancellor and Chief of Staff, Executive Office
Ms. Michelle Kiss - Associate Vice Chancellor and Chief of Staff, Board of Trustees
Ms. Jessica Darin - Associate Vice Chancellor, Strategic Executive Initiatives

The California State University System

View an interactive map of all CSU campuses.

California State University, Bakersfield

9001 Stockdale Highway
Bakersfield, CA 93311-1022
Dr. Vernon B. Harper, Jr., Interim President
(661) 654-2782
[CSU Bakersfield Website](#)

California State University, Channel Islands

One University Drive
Camarillo, CA 93012
Dr. Richard Yao, President
(805) 437-8400
[CSU Channel Islands Website](#)

California State University, Chico

400 West First Street
Chico, CA 95929
Dr. Stephen Perez, President
(530) 898-4636
[Chico State Website](#)

California State University, Dominguez Hills

1000 East Victoria Street
Carson, CA 90747
Dr. Thomas A. Parham, President
(310) 243-3696
[CSU Dominguez Hills Website](#)

California State University, East Bay

25800 Carlos Bee Boulevard

Hayward, CA 94542
Dr. Cathy A. Sandeen, President
(510) 885-3000
Cal State East Bay Website

California State University, Fresno
5241 North Maple Avenue
Fresno, CA 93740
Dr. Saúl Jiménez-Sandoval, President
(559) 278-4240
CSU Fresno Website

California State University, Fullerton
800 N. State College Boulevard
Fullerton, CA 92831-3599
Dr. Sylvia A. Alva, Interim President
(657) 278-2011
Cal State Fullerton Website

California State Polytechnic University, Humboldt
1 Harpst Street
Arcata, CA 95521-8299
Dr. Tom Jackson, Jr., President
(707) 826-3011
Cal Poly Humboldt Website

California State University, Long Beach
1250 Bellflower Boulevard
Long Beach, CA 90840-0115
Dr. Jane Close Conoley, President
(562) 985-4111
Cal State Long Beach Website

California State University, Los Angeles
5151 State University Drive
Los Angeles, CA 90032
Dr. Berenecea Johnson Eanes, President
(323) 343-3000
Cal State LA Website

California State University Maritime Academy
200 Maritime Academy Drive
Vallejo, CA 94590
Navy Reserve Vice Admiral Michael J. Dumont, Interim President
(707) 654-1000
Cal Maritime Website

California State University, Monterey Bay
100 Campus Center
Seaside, CA 93955-8001
Dr. Vanya Quiñones, President
(831) 582-3000
CSU Monterey Bay Website

California State University, Northridge

18111 Nordhoff Street
Northridge, CA 91330
Dr. Erika D. Beck, President
(818) 677-1200
CSUN Website

California State Polytechnic University, Pomona

3801 W. Temple Avenue
Pomona, CA 91768
Dr. Soraya M. Coley, President
(909) 869-7659
Cal Poly Pomona Website

California State University, Sacramento

6000 J Street
Sacramento, CA 95819
Dr. Luke Wood, President
(916) 278-6011
Sacramento State Website

California State University, San Bernardino

5500 University Parkway
San Bernardino, CA 92407-2318
Dr. Tomás D. Morales, President
(909) 537-5000
Cal State San Bernardino Website

San Diego State University

5500 Campanile Drive
San Diego, CA 92182
Dr. Adela de la Torre, President
(619) 594-5200
San Diego State Website

San Francisco State University

1600 Holloway Avenue San Francisco, CA 94132
Dr. Lynn Mahoney, President
(415) 338-1111
San Francisco State Website

San José State University

One Washington Square
San Jose, CA 95192-0001
Dr. Cynthia Teniente-Matson, President
(408) 924-1000
San José State Website

California Polytechnic State University, San Luis Obispo

One Grand Avenue
San Luis Obispo, CA 93407
Dr. Jeffrey D. Armstrong, President
(805) 756-1111
Cal Poly San Luis Obispo Website

California State University San Marcos

333 South Twin Oaks Valley Road
San Marcos, CA 92096-0001
Dr. Ellen J. Neufeld, President
(760) 750-4000
CSU San Marcos Website

Sonoma State University

1801 East Cotati Avenue
Rohnert Park, CA 94928
Dr. Ming-Tung "Mike" Lee, Interim President
(707) 664-2880
Sonoma State Website

California State University, Stanislaus

One University Circle
Turlock, CA 95382
Dr. Susan E. Borrego, Interim President
(209) 667-3122
Stanislaus State Website

Accreditation

San José State University is accredited by the WASC Senior College and University Commission (WSCUC) - 1080 Marina Village Parkway, Suite 500, Alameda, CA 94501, 510-748-9001, one of the six major regional college accreditation agencies in the United States; the California State Board of Education; and by a number of other agencies in special fields. The Teacher Education programs of the University also are accredited by the California Commission on Teacher Credentialing.

- **Art and Design** - National Association of Schools of Art and Design (NASAD) [Art, Art History, Design Studies, Animation & Illustration, Graphic Design, Industrial Design, Interior Design]
- **Audiology** - Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) - [Candidacy Status only]; Accreditation Commission on Audiology Education (ACAE)
- **Clinical Laboratory Scientist Training** - National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
- **Business** - Association to Advance Collegiate Schools of Business International (AACSB)
- **Chemistry** - American Chemical Society, Committee on Professional Training (ACS-CPT)
- **Computer Science** - Accreditation Board for Engineering and Technology (ABET)
- **Dance** - National Association of Schools of Dance (NASD)
- **Dietetics** - Academy of Nutrition and Dietetics - Accreditation Council for Education in Nutrition and Dietetics (ACEND)
- **Education** - California Commission on Teacher Credentialing (CTC) (includes programs in the Department of Counselor Education, Department of Special Education, and Department of Teacher Education)
- **Engineering** - Accreditation Board for Engineering and Technology (ABET) [Aerospace, Biomedical, Chemical, Civil and Environmental, Computer, Electrical, Industrial and Systems, Materials, and Mechanical]
- **Engineering Technology** - Association of Technology, Management, and Applied Engineering (ATMAE)
- **Journalism** - Accrediting Council on Education in Journalism and Mass Communications (ACEJMC)
- **Library and Information Science** - American Library Association (ASA)
- **Music** - National Association of Schools of Music (NASM)
- **Nursing** - California Board of Registered Nursing (CA BRN) and American Association of Colleges of Nursing (AACN), Commission on Collegiate Nursing Education (CCNE)
- **Nutrition and Food Science** - Accreditation Council for Education in Nutrition and Dietetics (ACEND)
- **Occupational Therapy** - Accreditation Council for Occupational Therapy Education of American Occupational Therapy Association (AOTA)
- **Psychology** - Board of Behavioral Sciences (BBS) [Clinical Mental Health Counseling]
- **Public Administration** - National Association of Schools of Public Affairs and Administration (NASPAA)
- **Public Health** - Council on Education for Public Health (CEPH)
- **Recreation** - Council on Accreditation of Park, Recreation, and Tourism Related Professions (CAPRTRP)
- **Social Work** - Council on Social Work Education (CSWE)
- **Speech-Language Pathology** - Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAAASLP)
- **Urban and Regional Planning** - Association of Collegiate Schools of Planning, Inc. (ACSP); Planning Accreditation Board (PAB)

Programs & Services

Academic Advising

Academic Advising ensures academic success and graduation in a timely manner. Undergraduates will have access to academic advisors in the College Student Success Center and in the major department. Academic advisors assist you with selecting courses and developing a plan for fulfilling SJSU requirements or choosing major requirements. Students should visit their college student success center for any questions they have about general education, probation and disqualification advising, assistance with interpreting your Degree Progress Report (MyProgress), academic planning using MyPlanner, and the process for late drop and withdrawal petitions

Advising Hub

www.sjsu.edu/advising

Declared Majors

Major department

Declared Minors

Minor department

College Student Success Centers

College of Health and Human Sciences Student Success Center (CHHS)

College of Information, Data & Society Student Success Center (SSC)

College of Science Student Success Center

College of Social Sciences Student Success Center

Engineering Student Success Center (ESSC)

Humanities and the Arts Student Success Center (HASSC)

Jack Holland Student Success Center (JHSSC)

Lurie College of Education Student Success Center (LCOE)

Undeclared

Exploratory Student Success Center

ADM 150

Student Athletes

Student Athlete Resource Center

YUH 105 and Simpkins 106 (Gadway)

Double Majors

Major departments

Interdisciplinary Studies Undergraduate Majors

Office of Undergraduate Education

ADM 159

408-924-2447

Interdisciplinary Studies Graduate Majors

College of Graduate Studies

ADM 229

408-924-2427

International Student and Scholar Services (ISSS)

Student Union

408-924-5920
STEM CIP Codes

Second Baccalaureate
Major departments

Academic Success Centers

College of Health and Human Sciences (CHHS) Student Success Center (SSC)

The College of Health and Human Sciences (CHHS) Student Success Center (SSC) provides advising for undergraduate students majoring or wanting to major or minor in programs offered in CHHS Departments and Schools, including undeclared/pre-nursing.

All CHHS students and students interested in a CHHS major are invited to stop by the Center for advising. The Center's services include general education advising, help with changing majors, academic policy related questions, meeting with peer mentors, and various regularly scheduled presentations and workshops. Looking for academic advice or maybe just some tips about how to navigate your way around SJSU? Check out the CHHS Student Success Center! It's also a great place to meet, study, and learn. Laptop computers are also available for use in our Center.

Contact the CHHS Student Success Centers at:

MacQuarrie Hall (MH) 533
408-924-2910

Health Building (HB) 105
408-924-8601
Email: CHHSSuccesscenter@sjsu.edu
www.sjsu.edu/chhs-ssc

College of Information, Data & Society Student Success Center (SSC)

The College of Information, Data & Society Student Success Center (SSC) provides advising for undergraduate students majoring or wanting to major in programs offered in the College's Departments and Schools. The SSC works with students to develop plans that help them attain their personal, educational, and professional goals through academic advising, peer mentoring, and tutoring. The SSC also provides guidance on academic probation and other SJSU policies and procedures and advises prospective students.

Clark Hall (CL) 304 and ADM 150
Email: cpgesuccesscenter@sjsu.edu
www.sjsu.edu/cies/academic/success-center/

College of Science Student Success Center

The College of Science Student Success Center (formerly College of Science Advising Center, COSAC), is located in Duncan Hall, Room 212. The College of Science Student Success Center provides general education advising, academic advising for lower division Biology, Chemistry and Computer Science majors and other advising and student success services for students in the College of Science.

College of Science Student Success Center offers Change of Major workshops for students that would like to change into a Biology, Chemistry or Computer Science major. In addition, we process Chemistry Minor applications for students interested in adding a Chemistry minor.

Duncan Hall (DH) 212

408-924-5193

Email: science-advisingcenter@sjsu.edu

www.sjsu.edu/science-ssc/

College of Social Sciences Student Success Center

The College of Social Sciences (CoSS) Student Success Center was formerly the Academic Counseling Center for Excellence in the Social Sciences (ACCESS). Both current CoSS students and those students interested in minoring or majoring in a social sciences degree program are encouraged to see an advisor at the College of Social Science (CoSS) Student Success Center for general education advising, graduation support, and/or help with changing majors. We provide both drop-in advising and appointments.

Clark Hall (CL) 240

408-924-5363

Email: socsci-success@sjsu.edu

www.sjsu.edu/socsci-ssc/

Engineering Student Success Center (ESSC)

The Engineering Student Success Center provides advising services and student success programming for undergraduate and graduate students in the College of Engineering. We offer both drop-in advising and appointments.

The ESSC works in partnership with the Engineering major departments to offer a wide variety of advising and support services such as course planning, university policies, campus academic resources, and general support to help students persist to graduation. As students progress through their programs, we also offer graduation advising and assistance with post-college transitions, whether students decide to pursue graduate studies or begin their career in Silicon Valley and beyond.

Engineering Building (ENG) 116

Email: success-engineering@sjsu.edu

408-924-3990

www.sjsu.edu/essc

Exploratory Student Success Center

The Exploratory Student Success Center (formerly Undergraduate Advising and Success Center, UASC) provides academic planning, General Education advising and academic advising for undeclared students. Other services include probation and disqualification advising for all undergraduate majors, assistance with interpreting your Degree Progress Report (MyProgress), and after the Late Registration period, processing late drop and withdrawal petitions.

Administration (ADM) 150

Email: undergraduate-advising@sjsu.edu

www.sjsu.edu/exploratory/

Humanities and the Arts Student Success Center (HASSC)

The Humanities and Arts Student Success Center, located in Clark Hall, provides academic advising services to all students with majors and minors in the College of the Humanities and the Arts. Services include university requirements advising which encompasses general education, academic planning support, career advising and career exploration events, and mentoring to undergraduate students.

H&A Spartans are highly encouraged to proactively meet with our professional advisors for guidance on developing successful pathways toward graduation. H&A Spartans are also encouraged to study in our office, learn more about the majors and minors in our College, and participate in our scheduled activities including workshops and networking events.

Clark Hall (CL) 244

408-924-5095

Email: ha-successcenter@sjsu.edu

www.sjsu.edu/ha-advising/

Jack Holland Student Success Center (JHSSC)

The Jack Holland Student Success Center, located on the garden level of the Boccardo Business Center, provides advice to students about undergraduate business courses and programs. Prospective students are encouraged to talk with advisors about requirements for business major and general education courses. Prospective graduate students are encouraged to meet a graduate advisor in the Graduate Program Office in the Business Tower.

Boccardo Business Center (BBC) 008

408-924-3435

Email: jackholland-center@sjsu.edu

www.sjsu.edu/lcobssc/

Lurie College of Education Student Success Center (LCOE-SSC)

The Lurie College of Education Student Success Center provides a range of activities including academic advising, professional development workshops, mentoring, networking events, and access to university, college, and career resources.

All current LCOE undergraduate and graduate students, and students interested in learning more about majors and minors in Education, are encouraged to come by the Center to meet with an advisor, participate in our scheduled activities, or to utilize the study space.

Sweeney Hall (SH) 106

408-924-2700

Email: luriecollege-successcenter@sjsu.edu

www.sjsu.edu/luriessc

SJSU Online Student Success Center

The SJSU Online Student Success Center offers advising and student success programs for students enrolled in SJSU Online degree completion programs. The advising team collaborates with all departments at SJSU to provide online students with personalized and holistic support for their academic and personal success.

online-success@sjsu.edu

<https://www.sjsu.edu/online/student-success.php>

Student Athlete Resource Center (SARC)

The Student Athlete Resource Center provides academic support to San José State University student athletes, and liaisons with the college based, and Exploratory Student Success Center to foster timely graduation, and NCAA compliance, for student athletes. All student athletes have access to a SARC staff member and an advisor in their college or the Exploratory SSC.

Main campus: Yoshihiro Uchida Hall (YUH) 105
South Campus: Simpkins Stadium Center, Scott Gadway Academic Center 106
408-924-2535
Email: sarc-academics-group@sjsu.edu

Accessible Education Center (AEC)

The AEC facilitates academic accommodations and retention services for students with disabilities. Students interested in registering with the AEC begin the process online by completing the application and uploading disability documentation. Documentation should be appropriate to both verify a disability and to support requests for accommodations. Students can register with AEC at any time during their time at SJSU. The AEC determines and prescribes accommodations, services, and/or auxiliary aids on a case-by-case basis. In following the interactive process, eligible students may qualify for the following accommodations, services, and/or auxiliary aids (non-exhaustive list):

- Testing Accommodations
- Note Taking Services
- Alternative Formats
- Training for Assistive Technology
- Access to AEC Computer Lab (Center for Accessible Technology)
- Real-time Captioning
- Interpreting Services (ASL)
- Priority Registration

Accessible Education Center
Administration Building (ADM) 110
408-924-6000
www.sjsu.edu/aec
aec-info@sjsu.edu

Bursar's Office

The Bursar's Office manages the payment processing of tuition, fees, and housing. We administer installment payment plans, issue the student ID card (Tower Card), disburse financial aid, process refunds, provide financial counseling, and are responsible for collecting outstanding balances due to the university. Additionally, we also deliver the following services:

- Accept payment processing of cash, check, money order transactions in person; ACH (Automated Clearing House), credit card, or 529 Plan through the TRANSACT payment portal online. International wire and international credit card payments are collected through Flywire
- Publish tuition and fees schedule online
- Provide student account financial information
- Approve and disburse emergency loans
- Manage third-party agreements with agencies and departments paying student fees
- Collect on past due student accounts
- Process stop payments on university-issued checks

- Issue the 1098-T document

Bursar's Office

Student Services Center
408-924-1601
www.sjsu.edu/bursar
bursar@sjsu.edu

Career Center

Preparing for the college-to-career transition starts the moment you arrive on campus. Engage with us to discover your career interests, find internships and jobs that help you develop in-demand skills and learn how to design a meaningful future career.

Career Readiness

- Major and career exploration resources
- Free digital apps available 24/7 for self-assessments, resume building, interview preparation, and skills-building
- Personalized career counseling and coaching from master-level career counselors with industry experience to guide you on your career journey
- Strategies to build career experience through on- and off-campus career experiences and experiential learning.
- Mentoring programs to help you build your professional network
- Internship, job and graduate study preparation to help you meet your career goals

Career Opportunities

- Access to SJSU Handshake, our job and internship database, offering thousands of new opportunities each month for SJSU students
- Career fairs, networking events, and interviews with top employers to help you stand out from the crowd

Services are available to:

- Currently enrolled SJSU students
- New SJSU graduates (within 1 year of graduation)
- Alumni who purchase a Career Center annual membership or a la carte services

Find the Career Center at:

Administration Building (ADM) 154/255 (accessible)
408-924-6031
careercenter.sjsu.edu/
careerhelp@sjsu.edu

Case Management

The office of Case Management serves both the University and the individual student by working in a holistic manner with students who are experiencing higher levels of distress, life challenges, or barriers which could be interfering with their ability to be successful. Besides our 1:1 non-clinical case management support, our office also operates the SJSU Cares, Spartan Food Pantry, and Behavioral Intervention Team programs. Learn more at sjsu.edu/casemanagement/

Supporting Basic Needs through SJSU Cares

SJSU Cares assists students who are facing an unforeseen economic crisis by providing direct support and referrals around basic needs including food, housing, emergency assistance and more. Students needing support can submit a Request for Assistance at sjsu.edu/sjsucares

Spartan Food Pantry

Diaz Compean Student Union (first floor)

The Spartan Food Pantry is a walk-in, full-service, staffed, food assistance program offering non-perishable goods, fresh produce, and refrigerated items to eligible students. Review eligibility, donation guidelines, and volunteer opportunities at sjsu.edu/spartanfoodpantry

Behavioral Intervention Team (BIT)

The mission of the Behavioral Intervention Team (BIT) is to improve campus safety through a pro-active, thoughtful, and caring approach to situations that pose, or may reasonably pose, a threat to the safety and well-being of the SJSU community. If you are concerned about a Spartan in Distress please complete a Concerning Behavior Referral form or learn more at sjsu.edu/bit/

Case Management Office

Clark Hall (CL) 140
408-924-1234
sjsucares@sjsu.edu

Educational Opportunity Program (EOP)

Applicants who are low-income, and who would be the first generation in their family to earn a baccalaureate degree, are encouraged to apply online through CSU Apply for consideration in the Educational Opportunity Program. For more information see <http://www.calstate.edu/apply>.

EOP (Educational Opportunity Program)

Clark Hall (CL)
408-924-2637
www.sjsu.edu/eop
educational.opportunity.program@sjsu.edu

Emergency Information

Dial 911 from any on-campus or pay phone (or 408-924-2222 from mobile phones) to report a crime in progress or any life-threatening police, fire or medical emergency.

Bluelight Phones

Bluelight emergency phones are located throughout the campus grounds and inside buildings, elevators and in parking lots and garages. Bluelight phones connect to University Police 24 hours a day and can be used to report emergencies or request an evening safety escort, shuttle ride or motorist assistance. Depending on the location, Bluelight phones are activated by either pressing a call button or picking up the phone receiver.

Non-Emergency and General Information

To report crimes not in progress, general concerns or request information, contact University Police at 408-924-2222 or visit UPD on the first floor of the University Police Building 24 hours a day.

Alert-SJSU Notifications and Major Emergency Information

Alert-SJSU is the campus emergency notification system that provides information about what to do and where to go during a natural disaster or life threatening emergency. To register or update alert settings (most students are already automatically registered), sign in to MySJSU, select Alert-SJSU and enter your contact phone numbers and e-mail addresses. For more information during a major emergency, call 408-924-SJSU and not University Police (unless you are reporting a crime in progress or a life threatening emergency).

Facilities Unique to SJSU

- **Africana, Asian American, Chicano, & Native American Studies Center (AACNA)** is an open stack area at the Dr. Martin Luther King, Jr. Library that functions both as a library resource center and a community center, with the goals of scholarship, leadership, and community responsibility. AACNA provides six unique collections of materials along with programming and exhibits that support the university's academic disciplines and provide a visible identity for historically underrepresented groups.
- **Art Foundry**, located one mile south of campus, provides facilities for casting and fabricating large-scale sculptures in bronze, aluminum, iron and steel as well as work in stone and other materials.
- **Aviation Facility** provides hands-on aviation operation and maintenance experience from its classroom, laboratory and hanger facility at Reid-Hillview Airport.
- **Biological Sciences Research Collections** include entomology, herpetology, vertebrate and invertebrate museums and the Carl Sharsmith Herbarium.
- **Computer Music Labs** offer state-of-the-art computer and electro-acoustic music facilities to undergraduate and graduate music students, from 21st century technology such as a Meyer surround sound environment to classic synthesizers, such as an original Buchla 200e "Electric Music Box".
- **Engineering Laboratories** are state-of-the-art, the result of a \$41 million project supported by many of the nation's leading high technology corporations.
- **The Hammer Theatre** is a city-owned venue operated by the university. The Hammer offers dynamic, diversified performing arts, educational, and technology related programming.
- **Healthy Development Community Clinic** is an interdisciplinary training clinic that offers free services, education, and resources to foster health equity and holistic wellness for under-resourced children, youth, and families in South and East San Jose.
- **The Interdisciplinary Science Building** is a cutting-edge facility that includes Biology and Chemistry teaching and research laboratories, the Wildfire Interdisciplinary Research Center, Professional & Global Engagement classrooms and the Innovation Loft.
- **Ira F. Brilliant Center for Beethoven Studies** is the only research facility and document repository in North America dedicated solely to the study of the life and performance of the works of Ludwig van Beethoven.
- **Phyllis Forward Simpkins International House** is a large residence, located close to campus, that is home to U.S. and international students attending SJSU. The application to live at I-House can be found on the I-House website www.sjsu.edu/ihouse.
- **Journalism Laboratories** include the newsroom and advertising offices of the Spartan Daily, the studios of television's Update News, and the production room of the student magazine, Access, that provide applied experience in specific media.
- **Moss Landing Marine Laboratories** provides access to the geologically and biologically important Monterey Bay Canyon and to some of the world's richest ocean and salt marsh research areas.
- **Kay Armstead Center for Communicative Disorders** is an on-campus multilingual audiology and speech pathology community clinic.
- **Timpany Center** is owned by Santa Clara County and operated by the Department of Kinesiology in collaboration with other schools/departments within the College of Health and Human Sciences to provide

internships/research opportunities in health and physical activity for those with disability, older populations, and the obese.

Financial Aid and Scholarships

The Financial Aid and Scholarships Office awards federal, state and local grants, loans and scholarships. Start by filing the federal Free Application for Federal Student Aid (FAFSA). Eligible AB540 students (undocumented immigrant status) may qualify for state grant programs by completing the CA Dream Application. Both applications are available beginning on October 1 for the next academic year and the priority filing deadline is March 2. The priority deadline is March 2 of every year. You must apply every year to be considered for financial aid for the following academic year. By completing the process, we establish your financial need. Need is the difference between a typical student budget and what you and your family are expected to pay. Aid is awarded via:

Grants

Since grants generally do not have to be repaid, grants typically are awarded to undergraduate students with the greatest need. SJSU distributes the Federal Pell Grants, Federal Supplemental Educational Opportunity Grants (SEOG), Federal Teacher Education Assistance for College and Higher Education (TEACH) Grant; Golden State teacher Grant (GSTC), California Grants A, B; Middle Class Scholarship (MCS), the State Graduate Fellowship, Educational Opportunity Program (EOP), Graduate Professional Business, Ed.D Program - Educational Leadership Grant, Audiology Program Grant for the Doctor of Audiology (AuD) Program, Nursing Practice Grant for Doctor of Nursing Practice (DNP) Program, Occupational Therapy Grant for Doctor of Occupational Therapy (OTD) Program, Spartan Completion Grant and the State University Grants.

Loans

Loans can be helpful, but they must be repaid. If you must borrow, limit the amount to what you really need. It may seem nice now, but you will be repaying the funds, with interest, after you leave school. SJSU awards the following loan type: Kuhlman Loan, a loan program funded from the estate of a generous alumna. Also, loans are awarded through the federal government for the Federal Direct Stafford Subsidized and Unsubsidized Loans and Federal Plus Loans (for parents of college students). In addition, graduate students are eligible to borrow through the Federal Graduate Plus Loan Program, CA Dream Loans are available to students who complete the CA Dream Application and meet eligibility criteria.

Scholarships

Apply online. The Scholarship Office has information to assist you with your scholarship search.

Work Study

Rather than take loans, the Federal Work-Study program allows students to work part-time while learning job skills. There are both on-campus and off-campus job listings for qualified students.

Fee Deferrals

Once you have submitted all requested documents, a fee deferral will be assigned to your record to hold your classes and delay the payment of registration fees while your financial aid process is completed. To prevent enrollment cancellation, it is your responsibility to submit all requested documents prior to the scheduled fee payment deadline.

Be sure to monitor your account at MySJSU for file status changes and "To Do" items. Financial Aid fee deferrals are temporary and are issued once all requested financial aid documents are submitted.

Financial Aid and Scholarships

Student Services Center (SSC)
408-283-7500
www.sjsu.edu/faso

Financial Assistance

The following information concerning student financial assistance may be obtained from the Director of Financial Aid and Scholarships, Student Services Center, 408-283-7500:

- A description of the federal, state, institutional, local, and private student financial assistance programs available to students who enroll at San José State University;
- For each aid program, a description of procedures and forms by which students apply for assistance, student eligibility requirements, criteria for selecting recipients from the group of eligible applicants, and criteria for determining the amount of a student's award;
- A description of the rights and responsibilities of students receiving financial assistance, including federal Title IV student assistance programs, and criteria for continued student eligibility under each program;
- Provide information to students about the institution's satisfactory academic progress standards that students must maintain for the purpose of receiving financial assistance and criteria by which a student who has failed to maintain satisfactory progress may reestablish eligibility for financial assistance (appeals process);
- The method by which financial assistance disbursements will be made to students and the frequency of those disbursements;
- The way the school provides for Pell-eligible students to obtain or purchase required books and supplies by the seventh day of a payment period and how the student may opt out;
- The terms of any loan received as part of the student's financial aid package, a sample loan repayment schedule, and the necessity for repaying loans;
- The general conditions and terms applicable to any employment provided as part of the student's financial aid package;
- The terms and conditions of the loans students receive under the Direct Loan Program;
- The responsibility of San José State University for providing and collecting exit counseling information for all student borrowers under the federal student loan programs; and
- Contact information for university offices available for disputes concerning federal, institutional and private loans.

Honors

The university recognizes outstanding academic achievement of its students through a variety of different honors.

Honors in the Major

Students who have completed an approved honors in the major receive "honors at graduation" as distinct from "university honors at graduation." The following departments offer honors in the major programs:

- Department of Aviation and Technology
- Department of Biological Sciences

- Department of Chemistry
- Department of Child and Adolescent Development
- Department of Communication Studies
- Department of Computer Science
- Department of Economics
- Department of English and Comparative Literature
- Department of Environmental Studies
- Department of Geology
- Department of History
- Department of Mathematics and Statistics
- Department of Political Science
- Department of Psychology
- Department of Sociology and Interdisciplinary Social Sciences
- Lucas College and Graduate School of Business
- School of Music

President and Dean Scholars

Each spring the Honors Convocation recognizes and encourages superior undergraduate academic achievement of Presidents' and Deans' Scholars. There are two levels of Honors Scholars:

- **President's Scholars:** Any undergraduate student who has earned a 4.0 grade point average at San José State University during Fall or Spring terms.
- **Deans' Scholars:** Any undergraduate student who has earned a 3.65 or higher grade point average at San José State University during Fall or Spring terms.

The minimal load allowed for the award of academic honors is the student's full program of graded courses or 12 units, CR (Credit) grades are not counted toward the calculation of the grade point average nor toward the 12 unit minimum. Only SJSU courses for which grades are posted, including the clearance of incompletes made during that time period, shall be used.

Recognition of these Honors Scholars through the Honors Convocation was inaugurated at the university in 1962 by the three honor societies - Phi Kappa Phi, Sigma Xi and the Phi Beta Kappa Faculty Club. It is currently under the sponsorship of the University Honors and Honors Programs Committee.

Certain grades are not counted for honors: credit by examination, "overseas" grades, extension courses, "credit" grades and incompletes. Designation as a President's or Dean's Scholar does not apply to second baccalaureate, credential or graduate students.

Outstanding Graduating Senior Awards

Announced each year at Commencement by the University President, the Outstanding Graduating Senior Awards recognize exceptional scholarship and service to the university and community based on the following criteria:

- An overall cumulative GPA of at least 3.75;
- Significant demonstrated SJSU leadership area(s) of university life and/or;
- Significant contributions to the welfare of the university and/or the community, and/or;
- Evidence of a high level of intellectual, artistic, or academic accomplishment, and/or personal contribution as an undergraduate student;
- At least one professional nomination letter submitted by a SJSU faculty or staff member.

To be considered for this honor, visit the Student Affairs website at www.sjsu.edu/studentaffairs and follow the programs link for Outstanding Graduating Senior Awards or contact the Office of the Vice President for Student Affairs at 408-924-5900.

University Honors at Graduation

Criteria used to determine honors at graduation are those in effect as of the date of graduation. Honors at graduation are only bestowed upon undergraduates (as described in University Policy, S17-13).

- Summa Cum Laude is awarded to those undergraduate students achieving a cumulative grade point average of 3.85 or higher in both university and college work, and all work undertaken at SJSU.
- Magna Cum Laude is awarded to those undergraduate students achieving a cumulative grade point average of 3.70 or higher (but less than 3.85) in both university and college work, and all work undertaken at SJSU.
- Cum Laude is awarded to those undergraduate students achieving a cumulative grade point average of 3.50 (but less than 3.70) or higher in both university and college work, and all work undertaken at SJSU.

Housing

SJSU's residence halls and apartments provide you with a great opportunity to transition into university life. Living on campus is a great way to connect with the academic, social, and cultural aspects of our campus. Immerse yourself in study groups, clubs, athletic events and social activities for the total on-campus living experience!

Visit the University Housing website for more information and to fill out an online application.

Housing License Agreement

University Housing Services strives to create a residential community that supports and enhances academic success, fosters the learning and development of our students, and promotes student involvement and civic engagement. As a department, our practices promote efficiency, operational effectiveness and fiscal responsibility.

Frosh On-Campus Housing Requirements

For more information related to campus housing policies and requirements, refer to the Housing website.

University Housing Services

408-795-5600

www.sjsu.edu/housing/

uhs-frontdesk@sjsu.edu

Identity-Based Student Resources

- **ASPIRE/McNair TRIO Programs**

The Federal TRIO Programs (TRIO) are Federal outreach and student services programs, SSS (ASPIRE) and the McNair Scholars Program targeted to serve and assist low-income, first-generation college students, and individuals with disabilities to progress through the academic pipeline from the baccalaureate, and postbaccalaureate to increase the attainment of Ph.D. degrees by students from underrepresented segments of society.

ASPIRE

Student Services Center 518

408-924-2540
aspire-program@sjsu.edu
www.sjsu.edu/aspire/

McNair

408-924-2540
mcnair-program@sjsu.edu
www.sjsu.edu/mcnair/

- **Black Leadership and Opportunity Center (The BLOC)** serves to holistically empower, uplift, and develop all students in the African Diaspora through strengthening and building community bonds, encouraging a positive Black identity, and providing social and academic support. The BLOC provides services which aim to promote academic and personal success starting with recruitment through graduation.

Student Union 1360

408-924-5105
thebloc@sjsu.edu
www.sjsu.edu/thebloc

- **Center for Asian Pacific Islander Student Empowerment** is a place to study, research, gather and connect to SJSU. Community members bridge the gap between SJSU and the rich history and contributions of Asian-Americans to this region.

Student Union 1520

408-924-3674
capise@sjsu.edu
www.sjsu.edu/capise

- **Chicanx/Latinx Student Success Center**, also known as Centro, provides a community gathering space as well as innovative programming and services to support the success of all Chicanx and Latinx students at SJSU. Centro provides spaces that validate students' intersecting identities, affirm their academic capabilities, develop their leadership skills, and foster healthy relationships, while promoting civic and community engagement.

Student Union 1360

408-924-5102
chicanxlatinxssc@sjsu.edu
www.sjsu.edu/chicanxlatinxssc

- **Guardian Scholars** - The Guardian Scholars Program at SJSU celebrates and supports students who have experienced foster care, have legal guardians, are wards of the court, unaccompanied unhoused youth or independent students as determined by the Office of Financial Aid and Scholarships. We provide a network of integrated services and resources that focus on academic, career, and lifelong personal development.

Clark Hall, First Floor

guardianscholars@sjsu.edu

- **Gender Equity Center (GenEC)** advocates for social justice, respect, and safety for all members of the San José State University community, by educating on issues experienced by people because of their gender and/or their perceived gender, through an intersectional lens.

Student Union 1650

408-924-6500
sjsugenec@gmail.com

www.sjsu.edu/genec
@sjsugenec

- **MOSAIC Cross Cultural Center** is an inclusive and engaging space for students to study, relax, build community, and ask for information. MOSAIC provides opportunities for social justice engagement, co-curricular learning, and avenues for student advocacy.

Student Union 1700

408-924-6255
mosaic@sjsu.edu
www.sjsu.edu/mosaic

- **Native American Indigenous Student Success Center** aims to create an inclusive environment for all Native American Indigenous students by cultivating a more nuanced understanding of Indigenous people and cultures as we exist today. We do this by hosting various events, programs, and services that honor our communities and histories and provide academic and co-curricular support throughout the academic year.

NAISSC Location: 1st Floor of Clark Hall (Next to EOP & GSP lounges)

408-924-3919
naissc@sjsu.edu
website: (coming soon)

- **PRIDE Center** is a community space for the LGBTQ+ students of San José State University. Through dynamic programming and educational outreach the PRIDE Center seeks to improve the campus climate for LGBTQ+ students and advocate for the respect and safety of all members of the campus community. In collaboration with other campus programs and community services the center works to meet the needs of students to promote the successful completion of their educational goals.

Student Union 1600

408-924-6157
sjsupride@gmail.com
www.sjsu.edu/pride
@sjsupride

- **UndocuSpartan Student Resource Center** is committed to creating an informed and affirming learning environment for undocumented students where they can be empowered and engage in transformational opportunities that support their personal, academic, and career growth.

Clark Hall (CL) 100 F/G

408-924-2762
undocuspartan@sjsu.edu
www.sjsu.edu/undocuspartan

ID - SJSU ID Number

An SJSU ID number is assigned to all students. To protect your privacy, the SJSU ID number replaces the use of Social Security Number for most SJSU transactions. This number cannot be changed. New students receive this information via admission office communications shortly after submitting your application. See SJSU ID, also known as the Tower Card.

SJSU ID Password

Access One.SJSU.edu on the web using your SJSU ID number and password. MySJSU uses your SJSUOne login information. If you have not yet set your password, you can navigate to One.SJSU.edu to MySJSU and click the Set/Reset Password button to create a password

Having trouble logging in? If you cannot reset your password using the Set/Reset Password button, please contact itservicedesk@sjsu.edu for assistance. Include your full name, SJSU ID if known (also known as your Tower ID), date of birth, and mailing address.

Institutional Assistance

- Information concerning the **cost of attending** San José State University is available from the Financial Aid and Scholarship Office, and includes:
 - Tuition and fees;
 - The estimated costs of books and supplies;
 - Estimates of typical student room, board, and transportation costs; and
 - If requested, additional costs for specific programs.
- Information concerning the **refund policies** of San José State University for the return of unearned tuition and fees or other refundable portions of institutional charges is available from the Bursar's Office.
- Information concerning **policies regarding Federal Title IV student assistance funding and return of those funds** as required by regulation is available from the Financial Aid and Scholarship Office.
- Information regarding facilities and services available to **students with disabilities** may be obtained from the Director of the Accessible Education Center.
- Information concerning San José State University policies, procedures, and facilities for students and others to **report criminal actions or other emergencies** occurring on campus may be obtained from the University Police Department.
- Information concerning San José State University Annual Security Report and Annual Fire Safety Report may be obtained from the Clery Director, Office of the Vice President for Administration and Finance.
- Information concerning the prevention of **drug and alcohol abuse and rehabilitation programs** may be obtained from the Student Wellness Center. The current Drug and Alcohol Abuse Prevention Program (DAAPP), maintained by the DFSCA/Part 86 Compliance Official, is available for viewing on the Drug-Free Schools and Communities Act website.
- Information regarding **student retention and graduation rates** at San José State University and, if available, the number and percentage of students completing the program in which the student is enrolled or has expressed interest may be obtained from the College of Graduate Studies or Undergraduate Education.
- Information concerning **athletic opportunities** available to male and female students and the financial resources and personnel that San José State University dedicates to its men's and women's teams may be obtained from the Athletics Director of Compliance.
- Information concerning **teacher preparation programs** at San José State University, including the pass rate on teacher certification examinations, may be obtained from Credential Services.
- Information concerning **grievance procedures for students** who feel aggrieved in their relationships with the university, its policies, practices and procedures, or its faculty and staff may be obtained from the Student Ombudsperson.
- Information concerning student activities that San José State University provides, must be easily accessible on the Student Involvement website.
- Information concerning student body diversity at San José State University, including the percentage of enrolled, full-time students who are (1) male, (2) female, (3) Pell Grant recipients, and (4) self-identified members of a specific racial or ethnic group, must be obtained from Institutional Research.
- The federal Military Selective Service Act (the "Act") requires most males residing in the United States to present themselves for registration with the **Selective Service System** within thirty days of their eighteenth birthday. Most males between the ages of 18 and 25 must be registered. Males born after December 31, 1959, may be required to submit a statement of compliance with the Act and regulations in order to receive

any grant, loan, or work assistance under specified provisions of existing federal law. In California, students subject to the Act who fail to register are also ineligible to receive any need-based student grants funded by the state or a public postsecondary institution.

- Selective Service registration forms are available at any U.S. Post Office, and many high schools have a staff member or teacher appointed as a Selective Service Registrar. Applicants for financial aid can also request that information provided on the Free Application for Federal Student Aid (FAFSA) be used to register them with the Selective Service. For more information on the Selective Service System and to initiate the registration process, visit the official Selective Service Systems website.

International House

The SJSU International House is home to 72 U.S. and international students attending SJSU. Residents come from approximately 30 countries including the U.S. and enjoy outstanding facilities including fully-equipped computer room, wireless internet access throughout the building, study room, grand and upright pianos, spacious living and dining rooms, sports equipment and games. I-House staff promotes cross-cultural learning and communication, encouraging active participation in a wide variety of programs and activities.

I-House meets the on-campus living requirement for freshmen.

Visit the I-House website for more information and an application.

SJSU International House

360 South 11th Street
San José, CA 95112-2217
408-924-6570
www.sjsu.edu/ihouse
ihouse@sjsu.edu

International Student and Scholar Services

International Student @ Scholar Services (ISSS) cultivates a supportive and inclusive community by centralizing immigration advising resources and co-curricular programming for F-1 and J-1 international students and scholars.

SJSU ISSS

Student Union-West building
408-924-5920
international-office@sjsu.edu
www.sjsu.edu/iss

IT Help Desk

The IT Help Desk provides assistance with campus software and network issues, including MySJSU, Canvas, Wi-Fi, SJSU Email, and many other applications. If you need technical assistance, start here.

itservicedesk@sjsu.edu
408-924-1530

Operating hours for phone and chat support available on IT Service Desk website.

Library

The Dr. Martin Luther King, Jr. Library, an innovative collaboration that integrates the collections, services and staff of two major institutions: The SJSU University Library and the San José Public Library is a unique learning and community center where the entire Silicon Valley Community--students, faculty, and residents--can learn for life. The combined collections include more than 4 million items and the building houses 33 delightful public art installations.

King Library
408-808-2000
www.sjlibrary.org

MyProgress Report

The MyProgress Report, linked at your MySJSU account, allows matriculated students, advisors, and evaluators to determine what requirements a student has satisfied and what requirements are still needed. The MyProgress report matches academic requirements (university and major/minor) against a student's individual academic record.

The report is a valuable tool in tracking your degree requirements, as well as an advising tool to assist you and your advisor in monitoring your academic progress. You should consult with your major advisor on a regular basis.

Official verification of completion of your degree requirements will be processed by the Office of the Registrar.

one.sjsu.edu

One.SJSU.edu is the primary website for important transactions between students and the campus. By clicking on the MySJSU tile:

- Applicants can access information sent to them by the admissions offices (Undergraduate Admissions, Student Outreach & Recruitment, & Outreach and GAPE) by logging in to check application status and view messages in their MySJSU student portal.
- Admitted and enrolled students can view their enrollment appointment start date and time for registration.
- Admitted and enrolled students can register for classes.
- Admitted and enrolled students can search for open sections of classes.
- Admitted and enrolled students can print their own class schedule.
- Admitted and enrolled students pay fees online.
- Undergraduates can view their degree progress using MyProgress.
- Continuing and former students can print grades from Spring 1991 to the present.

Open University

San José State University's Open University program permits enrollment by non-matriculated students in specified regular curriculum classes on a space available basis. Formal admission to the university is not required.

For further information concerning Open University, contact Professional and Global Engagement or visit the website below.

408-924-2670
professionaled@sjsu.edu
sjsu.edu/current/

Campus Centers and Institutes (formally Organized Research and Training Units)

Centers, Institutes, and Collaboratives

Campus Centers and Institutes (CCIs) are "organized around a scholarly, creative, research, education, and/or public service activity that combines the interests and expertise of individuals, departments or administrative units, and may draw on expertise of others external to the campus or the Academy; and may offer services to constituents beyond the campus community, e.g. individuals as well as private and public entities. While CCIs by their nature and location serve the campus community, their focus is not exclusively internal." (University Policy S22-1).

- Accounting Advancement Center Links SJSU students and accounting professional firms; facilitates student networking and professional opportunities; sponsors student seminars on current accounting issues; and rewards excellence among students and faculty members through scholarships and grants.
- Bay Area Retail Leadership Center Consists of a multilateral partnership between SJSU students, retail industry partners, and SJSU faculty, administration, and staff. A program of Center-sponsored events brings constituents together in an effort to provide co-curricular, experiential learning opportunities designed to build students' leadership skills as well as their awareness and knowledge about retailing as a career destination.
- Center for Applied Mathematics, Computation, and Statistics Provides an innovative educational program to develop training through practical experience.
- Center for Applied Research on Human Services Housed in the College of Health and Human Sciences, the Center provides support and services to SJSU faculty interested in applied human services research, including a Grants Academy, writing groups, statistical consultation, and methodological workshops.
- Center for Asian Studies Provides information and counsel about studies in Asia.
- Center for Banking and Financial Services The mission of the Center is to provide an important complementary component to students' curricular education in the area of financial intermediation. One of its major goals is to create a link between SJSU students and the banking and financial services sector. By promoting professional development events, the Center provides students with opportunities to interact with professionals. Another major goal is to provide value to the college and university by enhancing the students' knowledge of financial topics. In fact, the Center sponsors presentations and lectures focusing on topics related to financial intermediation. Finally, the Center rewards excellence among students and faculty members by providing financial support through scholarships and research grants.
- Center for Comparative Philosophy Aims at promoting and enhancing the research and scholarship in comparative philosophy, the concerns of which cut across different disciplines as well as different areas of philosophy, for the sake of contributing to the academic mission of SJSU and the international scholarship of comparative philosophy.
- Center for Human Language Technology Supports the study of computational linguistics, acts as a resource for Silicon Valley technology industries, and explores applications of human language technology in industry, education, and society at large.
- Center for International Sport and Kinesiology Promotes and facilitates cross-national and cross-cultural interaction of individuals and their ideas in the context of sport and human performance.
- Center for Literary Arts of San José Provides programs featuring major contemporary writers, poets, and scholars.
- Center for Organizational Resilience **Re•silience** (*noun* /rəˈzilyəns/) - "the ability to withstand and recover from deliberate attacks, accidents, or naturally occurring threats or incidents" (US Presidential Policy Directive 21, 2013). In a world of accelerating change, resilience is recognized as ever more crucial to survival, not just for individuals but for organizations as well. The mission of the Center for Organizational Resilience (COR) at San Jose State University is to serve as Silicon Valley's Center of Excellence for theory and practice in the emerging field of Resilience Management. COR supports a network of subject matter experts coalescing to provide resilience thought leadership and research and to disseminate leading practices to academia and the public and private sectors through training, seminars and a variety of digital channels.

- Center for the Development of Recycling A national clearinghouse for recycling information and for applied waste management research aimed to increase the scope and availability of recycling information and to increase the effectiveness of recycling as a solid waste management strategy.
- Center on Ethics Facilitates the planning and coordination of research-related activities concerned with issues of professional and business ethics.
- Center for Innovation in Applied Education Policy: Serving At-Promise Youth in K-12 education across California. We are next-generation CSU faculty with a collaborative vision that supports systemic change. The IAEP Center is based at San José State University and serves to empower California systems of support providers to better serve at-promise students. Our Center is committed to interprofessional and interdisciplinary collaboration centered on closing opportunity gaps. Meet the directors, faculty, graduate students, and advisory board members that serve to strengthen our knowledge network hub.
- Early Childhood Institute Recognizing the potential each and every child brings into the world, the Early Childhood Institute (ECI) at SJSU promotes equitable, high-quality, inclusive early learning experiences by 1) expanding and enhancing the training of early childhood professionals; 2) collaborating with campus and community partners to advance applied research; and 3) engaging in advocacy efforts that benefit educators, young children, and families.
- Global Leadership Advancement Center Housed in SJSU's Lucas College and Graduate School of Business, its mission is advancing, fostering, and disseminating cutting-edge knowledge on global leadership and its development via diverse programs for scholars, students, and the community. GLAC has two innovative student programs unique to San Jose State: the GLLab, which is an assessment center for global competencies, and the Global Leadership Passport Program, a co-curricular program in which students earn stamps for activities that prepare them for global work. GLAC's Social Innovation Initiative leverages the symbiotic relationship among San José State University, social entrepreneurs, the City of San José, foundations, and other innovation organizations to encourage and train people to apply technology and innovation for the good of the local community.
- Human Rights Institute A research and policy institute in the heart of Silicon Valley. To ensure its lasting success and for those looking to invest in effective policy solutions and distinguish SJSU as a new center for human rights scholarship-anonymously or to leave a deliberate legacy-there are plenty of opportunities to give.
- Institute for Emancipatory Education facilitates community-engaged research and advances emancipatory pedagogies that support the redesign of learning from preschool through post-secondary.
- Institute for Metropolitan Studies Facilitates the exchange of knowledge and expertise regarding urban problems and critical matters related to metropolitan development.
- Institute for Modern Optics Facilitates communication, collaboration, and coordination in the area of lasers and optics and promotes research projects in non-linear effects at surfaces, laser beam characteristics, two-wave laser mixing, holography, light emission from thin film tunnels, and laser spectroscopy; contact the Physics Department for more information.
- Institute for Nursing Research and Practice Promotes the climate of inquiry within the School of Nursing by coordinating and promoting research projects and interests of nursing faculty in order to develop innovative models for nursing research, practice, and education.
- Institute for People and Performance The Institute for People and Performance (IPP), housed in San Jose State University's Lucas College and Graduate School of Business aspires to be a center of excellence aimed at advancing knowledge of human capital management, through a combination of training, research, and engagement with industry and professional organizations.
- Ira F. Brilliant Center for Beethoven Studies The only research facility and document repository in North America dedicated solely to the study of the life of and performance of the works of Ludwig van Beethoven.
- Martha Heasley Cox Center for Steinbeck Studies Houses one of the most extensive collections of the Nobel Prize-winning author's manuscripts, letters, photographs, and artifacts, fostering research concerning the life and work of the author.
- Materials Characterization and Metrology Center Provides materials imaging and chemical analysis capabilities for applications in various fields of science and engineering. Instruments are located in various buildings across campus.

- Mineta Transportation Institute Focuses on international surface transportation policy issues as related to three primary responsibilities: research, education, and technology transfer. MTI receives policy oversight from an internationally respected board of trustees who represent all of the major transportation modes.
- Silicon Valley Big Data and Cybersecurity Center Directs the development of cybersecurity and big data research projects through multidisciplinary cooperation. Serves as a clearinghouse and promotes cooperation between industry, government, and SJSU in research & development, policy analysis & development, and workforce training.
- Silicon Valley Center for Entrepreneurship Promotes effective entrepreneurship through knowledge creation, knowledge dissemination, collaborative partnerships and outreach activities.
- Silicon Valley Center for Operations and Technology Management A knowledge portal for sharing academic and industrial information related to operations, supply chain, and technology management among students, faculty members, and industry partners. It is also the point of training for supplying and supporting the professional needs of the industry. The Center serves as a future knowledge hub through research on state-of-the-art topics relevant to the Center's themes.
- The Spatial Analytics and Visualization Institute (SAVI) uses the power of geography and Geographic Information Science to produce impactful research and professional services to serve our university departments, neighborhood organizations, public agencies and private sector entities in Silicon Valley and the Bay Area. The SAVI Center facilitates knowledge exchange in GIScience by organizing public events, bringing together scholars and professionals with unique expertise to present cutting edge research findings and hosting educational workshops on technological advances in spatial analytics and visualization.
- Sourisseau Academy for State and Local History Promotes a better understanding of California's state and local history, with an emphasis on the history of Santa Clara Valley, through graduate scholarships and collections of historical source materials.
- The Wildfire Interdisciplinary Research Center (WIRC) at San José State University brings together an interdisciplinary team of academic and industry leaders to address the wildfire problem faced by many regions around the nation and the world. A National Science Foundation Industry-University Cooperative Research Center (IUCRC), and an official Campus Center and Institute within the California State University system, WIRC's mission is to conduct high-impact wildfire research to provide new predictive tools and informed strategies to communities and industry stakeholders, including first responders, those interested in risk analysis, and policymakers in communities, companies, and utilities affected by wildfire.

For more detailed information, visit Campus Centers and Institutes.

Parking Permits

Parking Online Services

Parking Services at San José State University uses virtual permits and License Plate Recognition (LPR) on campus.

Virtual permits allow you to park in your designated area without being required to display a physical permit. The license plate registered when purchasing your parking session will become your virtual parking permit. As each vehicle's license plate is used as your parking permit, license plates must be registered precisely to avoid being issued a citation. Errors in license plate registration are the responsibility of the registrant and will cause the issuance of a violation. License plates of vehicles must be accessible to read from the end of the parking space. You can register up to three vehicles on your permit. Only one vehicle is allowed on campus at a time. Paid parking session is required at all times when parking on campus. 24 hours a day, 7 days a week. License Plate Recognition (LPR) verifies parking session in all garages and lots. SJSU LPR Usage and Privacy Policy is available online.

Benefits of Virtual Permits

- Eliminates the requirement to display physical permits and the need to move permits from vehicle-to vehicle
- Eliminates the need to come to the Office to pick up physical permits. No More Lines!!!
- Easy to upgrade or downgrade semester or academic virtual parking permit

- Lost or stolen permits and the associated replacement fees, police reports, and processing times will be eliminated
- Your permit is active as soon as the permit effective date
- No more forgetting your permit or worrying about a permit being displayed improperly

No parking permit will be sold at the Bursar's Office. Student parking virtual permits are available for sale through Parking Online Services. For more information, please visit Parking Services, e-mail parking@sjsu.edu, or call 408-924-6557.

Student virtual permits purchased online with a credit card are active as soon as the permit effective date. For other forms of payment, please contact Parking Services.

Availability

Please note that parking permits do not guarantee on-campus parking availability during peak periods (typically Monday through Thursday, 9:00 am to 12:00 pm). During peak periods, commuters are encouraged to use Transportation Alternatives or the South Campus Garage located at 1278 S. 10th Street, San Jose, CA 95112.

Parking Services

University Police Building
408-924-6557
parking@sjsu.edu

Peer Connections

Peer Connections offers a range of programs to support students in their personal and academic growth including, but not limited to the development of critical thinking skills, independent learning strategies and effective study habits. All services are available free of charge to students enrolled in SJSU courses. Peer Connections' offerings consist of:

- Tutoring in over 320 different courses including writing, math, business, and science classes.
- Mentoring to guide students in their personal adjustment to college, helping students connect with other students and get the resources needed to thrive.
- Organized study groups with Supplemental Instruction Leaders for the most challenging classes.
- Support in certain classes to offer smaller group discussions and interactive collaborative learning.
- Appointments and drop-in services both in-person and online

Peer Connections

Student Services Center (SSC) 600
408-924-2587
peerconnections.sjsu.edu

Pre-Professional Study

Several sources of information and assistance are available for students who plan to enter the professions of art administration, dentistry, medicine, law, pharmacy, optometry, veterinary medicine, physical therapy, social work and theology. General information, including names and locations of faculty members who have been designated as "pre-professional" advisors, may be obtained from the appropriate academic department office. Interested students should also contact the university of their choice for information regarding the professional prerequisites for that institution. Consultants are available at the Career Center to discuss possible career paths. Application forms for admissions tests to law school, medical school and dental school are available in the Testing Office.

Student associations in pre-law, pre-medicine and pre-dentistry conduct active programs which include information about admission to professional schools, test preparation and seminars/workshops in the profession.

Pre-Law Programs

Law schools do not require any specific major. The American Bar Association emphasizes this point in its publication *Law as a Career*: "An undergraduate should be aware that there is no particular course of study that is required or preferred by law schools. Accordingly, students from a wide variety of majors (e.g., philosophy, physics, political science, engineering, and business) are admitted to law schools each year. There is no true pre-law curriculum."

However, students should keep in mind that particular courses will help them develop skills that are necessary for law school. The Law School Admission Council's *Official Guide to U.S. Law Schools* explains: "While no single curricular path is the ideal preparation for law school, you should choose courses that sharpen analytical reasoning and writing skills. Law schools prefer students who can think, read, and write well, and who have some understanding of what shapes human experience."

Students considering careers in law should consult regularly with a pre-law faculty advisor. The number and kind of courses that prepare students for law can be offered by a variety of departments. It is therefore important that students consult with a faculty member familiar with the curricular choices that best align student aspirations with law school expectations. A faculty advisor can also provide valuable information concerning law school and law careers that will not be acquired through any set of courses. The following departments offer pre-law advising: Justice Studies, Philosophy, Political Science. SJSU's pre-law website contains advisor contact info, as well as further information regarding course/major selection and preparation for law school applications.

Pre-Medical Programs

Medical schools do not require any specific major. While many applicants major in biology or biochemistry, the admission rate is quite good for non-science majors, in particular for psychology, because these graduates will have shown strength in two academic areas. At a minimum, during their college years, applicants must complete one year of general chemistry with lab, one year of organic chemistry with lab, physics with lab, math through calculus, one semester of statistics, one year of English composition, and one year, preferably two, of biology with lab. Students interested in any medical field should get as much hands-on experience as possible volunteering or working in medical settings so that they fully understand how physicians and other health professionals spend their time. There are pre-medical advisors in Biological Sciences, Chemistry, and Psychology; consult them early and often.

Office of the Registrar

The Office of the Registrar is responsible for registration, grades, verification of enrollment and degree, official transcripts, residency determinations, reinstatement, undergraduate graduation (which includes diplomas), visitor/concurrent enrollment, Dual Enrollment (Step-to-College), cross-enrollment, document imaging, and FERPA Compliance.

Contact Information:

Email: General Inquiries: registrar@sjsu.edu

DocuSign Forms Submission: records-regist@sjsu.edu

Fax: 408-924-2077

Phone: 408-283-7500 (Phone Hours: Mon-Fri: 9:00 a.m. - 4:00 p.m.)

Live Chat hours: Mon-Fri.: 2:00-3:30 p.m.

Closed weekends and holidays

Location: Student Services Center (SSC), Window "R" (First floor of North Garage, enter on 9th Street)

Mailing Address:

Office of the Registrar

San José State University
One Washington Square
San Jose, CA 95192-0009

Research and Innovation, Division

Students have opportunities in many majors to work with faculty on research, scholarship and creativity activity projects. Those who do can present their work in the spring semester in the SJSU Student Research Competition. Finalists of the SJSU competition are eligible for the CSU Student Research Competition.

Division of Research and Innovation

Clark Hall (CL) 500
(408)924-2272
officeofresearch@sjsu.edu
<http://www.sjsu.edu/research/>

Service Learning

In March 2000, the California State University Board of Trustees passed a landmark resolution in response to a request from the governor for a community service requirement for all students in California's public institutions of higher education. The CSU Board of Trustees' resolution called for the chancellor and each CSU president to "ensure that all students have opportunities to participate in community service, service learning (deemed academically appropriate by faculty), or both."

To learn more about general education service learning classes, courses in your major, or other service-based leadership opportunities for students, contact the Center for Community Learning and Leadership.

Center for Community Learning and Leadership

Clark Hall (CL) 203
408-924-3540
www.sjsu.edu/ccl

Student Government

Associated Students, SJSU, was founded in 1897 to provide representation and services to students at San José Teachers College. Since then, the organization has evolved from a student club to a fully operational student government entity. Also, as an auxiliary to the University, we provide services that allow students to enhance their college experience.

Originally, voluntary fees were first collected in 1910 to provide services and activities. By 1957, all students were paying a portion of their registration fees to support their student government organization.

Associated Students was incorporated in 1980 and the Student Council also became the Corporation's Board of Directors.

Review our website for more information and policies related to services provided.

Student Organizations

With over 400 student organizations at SJSU, getting involved is the best way to connect with campus life! For more information on department programs and services, please visit our Recognized Student Organizations website.

Student Involvement Policies and Procedures: Student Organization Handbook and Policies.

Student Wellness Center

The Student Wellness Center, centrally located in the heart of campus, is home to your health, counseling, and well-being needs at SJSU. Visit your medical provider, talk to your counselor, relax in the Wellness Lounge, and more!

(408) 924-5678
studentwellnesscenter@sjsu.edu
sjsu.edu/wellness

Counseling & Psychological Services

The Student Wellness Center offers confidential counseling; groups and workshops; crisis intervention services; resource referral and consultation; and outreach presentations. Counselors can work with you to improve your mood, decrease your anxiety, increase your skills in handling stress, improve your skills in relationships, and help you make better decisions.

Student Health Services

The Student Wellness Center provides quality, convenient, affordable medical care to registered SJSU students. Primary care is covered by a matriculated student's registration fees. Additional services, such as select laboratory tests, immunizations, procedures, pharmacy, and specialty visits, are provided at a nominal fee.

Wellness & Health Promotion

The Student Wellness Center offers workshops, health education, programming, and hosts activities in the Wellness Lounge, where students can access services and learn strategies to support their well-being.

Crisis Counseling and After Hours Emergencies

If you feel like you need to speak to someone immediately, we have counselors available to talk with you during business hours. Please come on in or give us a call at 408-924-5678.

- For after-hours nursing advice, call 408-924-5678
- For after-hours crisis counseling, call 408-924-5678
- National Suicide & Crisis Hotline: 9-8-8 (call or text)
- Trans Lifeline: 877-565-8860

Study Abroad and Away Programs

Study Abroad and Away contributes to the internationalization of San José State University by providing students the opportunity to study abroad on long-term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering non-credit Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. Through these channels, we seek to cultivate a diverse global community through international and domestic academic opportunities and partnerships.

For applications or more information about any of the programs described here, contact:

SJSU Study Abroad and Away Office
Student Union West

408-924-2670
spartansabroad@sjsu.edu
www.sjsu.edu/current/studyabroad/

SJSU Exchange Programs

Study at a partner university abroad for a semester or a year with an SJSU exchange! Choose from programs in over 20 countries, receive SJSU credit for every class you take, and study with students from all over the world. There are programs for every major, and all financial aid applies. There are even scholarships just for study abroad students!

Argentina

Universidad de Ciencias Empresariales y Sociales (Buenas Aires)

Australia

Queensland University of Technology (Brisbane)
Royal Melbourne Institute of Technology (Melbourne)

Austria

FH Campus Wien (Vienna)
MCI Management Center (Innsbruck)

China (Hong Kong)

City University Hong Kong (Hong Kong)
Hong Kong Baptist University (Hong Kong)

Finland

JAMK University of Applied Sciences (Jyvaskyla)

France

Institute of Political Science (Lille)
L'Ecole Nationale Supérieure de Création Industrielle (Paris)
Toulouse Business School (Toulouse)
Universities of Strasbourg Business School (Strasbourg)

Germany

Hochschule für Gestaltung Schwabisch Gmünd (Schwabisch Gmünd)
Technische Hochschule Ingolstadt (Ingolstadt)
RWTH Aachen University (Aachen)

India

Alliance Business School (Bangalore)

Ireland

University College Dublin (Dublin)

Japan

Kagoshima University (Kagoshima)
Kwansei Gakuin University (Osaka)
Kyushu University (Fukuoka)
Okayama University (Okayama)
Sophia University (Tokyo)
Yokohama National University (Yokohama)

Lithuania

Kaunas University of Technology (Kaunas)

Netherlands

Rotterdam Business School (Rotterdam)

Norway

University of Oslo (Oslo)

Portugal

University of Porto (Porto)

Spain

University of Burgos (Burgos)

Toulouse Business School (Barcelona)

South Korea

Gyeongsang National University (Jinju)

Kyungpook National University (Daegu)

Sweden

University West (Trollhattan)

Switzerland

Zurich University of Applied Sciences (Winterthur)

Thailand

Chulalongkorn University (Bangkok)

United Kingdom

Edinburgh Napier University (Edinburgh)

Liverpool John Moore's University (Liverpool)

Nottingham Trent University (Nottingham)

Portsmouth Business School (Portsmouth)

University of Birmingham (Birmingham)

University of Roehampton (London)

University of Strathclyde (Glasgow)

Vietnam

RMIT University Vietnam (Ho Chi Minh City)

CSU International Programs

Developing intercultural communication skills and international understanding among its students is a vital mission of the California State University (CSU). Since its inception in 1963, the CSU International Programs (CSU IP) has contributed to this effort by providing qualified students an affordable opportunity to continue their studies abroad for a full academic year in all programs and a semester option in some countries and programs.

More than 20,000 CSU students have taken advantage of this unique study option. Also, through the CSU IP exchange partnerships, more than 5,000 international students have come to study at the CSU.

International Programs participants earn resident academic credit at their home university while they pursue full-time study at a host university or study center abroad. CSU IP serves the needs of students in more than 100 designated academic majors. Affiliated with 70 recognized universities and institutions of higher education in 18 countries, CSU IP also offers a wide selection of study abroad destinations and learning environments

Australia

Griffith University (Brisbane)

Macquarie University (Sydney)
Queensland University of Technology (Brisbane)
University of Queensland (Brisbane)
Western Sydney University (Sydney)

Canada

Concordia University (Montréal)

Chile

Pontificia Universidad Católica de Chile (Santiago)

China

Peking University (Beijing)

Denmark

Danish Institute for Study Abroad (This exchange is currently inactive.)

France

Aix-Marseille Université
CY Cergy Paris Université
École Normale Supérieure Paris-Saclay (ENS)
ESSCA, Aix-en-Provence Campus (effective Spring 2024)
Institut Catholique de Paris
Institut Polytechniques des Sciences Avancées (IPSA)
Institut Supérieur d'Electronique de Paris (ISEP)
Science Politiques Saint-Germain-En-Laye
Sorbonne Université
Université d'Evry Val-d'Essonne (UEVE)
Université de Versailles Saint-Quentin-en-Yvelines (UVSQ)
Université Paris Cité
Université Gustave Eiffel
Université Panthéon-Assas
Université Paris 1 Panthéon-Sorbonne
Université Paris 8 - Vincennes-Saint-Denis
Université Paris Nanterre
Université Paris-Est Créteil Val-de-Marne (UPEC)
Université Paris-Saclay
Université Sorbonne Nouvelle (formerly Paris 3)
Université Sorbonne Paris Nord

Germany

Hochschule Biberach
Hochschule der Medien Stuttgart
Hochschule für Forstwirtschaft Rottenburg
Hochschule Furtwangen
Hochschule Konstanz
Hochschule Mannheim
Hochschule für Wirtschaft und Umwelt Nürtingen-Geislingen
Hochschule Reutlingen
Hochschule Ravensburg-Weingarten
Hochschule Ulm
Karlsruher Institut für Technologie
Pädagogische Hochschule Freiburg
Pädagogische Hochschule Ludwigsburg
Staatliche Hochschule für Musik Trossingen

Staatliche Akademie der Bildenden Künste Stuttgart
Universität Freiburg
Universität Heidelberg
Universität Hohenheim
Universität Konstanz
Universität Mannheim
Universität Stuttgart
Universität Tübingen
Universität Ulm

Ghana

University of Ghana (Accra)

Israel

University of Haifa (Haifa)

Italy

CSU Florence Study Center (Florence)
Accademia di Belle Arti Firenze

Japan

Waseda University (Tokyo)
University of Tsukuba (Tsukuba)

Mexico

Instituto Tecnológico y de Estudios Superiores de Monterrey (Querétaro)

South Africa

Nelson Mandela University (Port Elizabeth)

South Korea

Yonsei University (Seoul)
Korea University

Spain

Universidad Complutense de Madrid (Madrid)
Universidad de Granada (Granada)

Sweden

Uppsala University (Uppsala)

Taiwan

National Taiwan University (Taipei)

United Kingdom

University of Bradford (Bradford)
University of Bristol (Bristol)
University of Hull (Hull)
Kingston University (Kingston)
Swansea University (Swansea)
University of Birmingham (Birmingham)

Students participating in CSU IP pay CSU tuition and program fees, and are responsible for airfare, accommodations, meals and other personal expenses. Financial aid, with the exception of Federal Work-Study, is available to qualified students and limited scholarship opportunities are also available. All programs require students to maintain good academic and disciplinary standing, many programs are open to sophomores or graduate students. California

Community College transfer students are eligible to apply (to select programs) directly from their community colleges. Students must possess a current cumulative grade point average of 2.75 or 3.0, depending on the program, and must fulfill all coursework prerequisites. Additional program information and application instructions can be found on the International Programs Website.

International Student Exchange Programs (ISEP)

SJSU is a member of ISEP, a non-profit organization that offers study abroad options at over 200 universities in 51 countries. Study with ISEP for an academic year, a semester, or a summer! Immerse yourself in classes at local universities and receive SJSU credits for each course. If you are interested in studying abroad in a place that is off the beaten path, ISEP has the program for you!

SJSU Faculty-Led Programs (FLP) & Summer School Abroad (SSA)

SJSU Faculty-Led Programs and Summer School Abroad programs are 1-8 week study abroad programs that take place domestically and abroad during the summer or winter sessions. FLPs are led by an SJSU faculty member and SSA programs offer direct placement into a partner university's summer school abroad for a short-term program. Both experiences provide students the opportunity to earn SJSU credit while participating in a global experience.

SJSU Alternative Break Programs

Alternative Break Programs provide San José State University students the opportunity to experience other cultures through community visits, service learning projects, group activities, and discussions. These non-credit bearing programs allow you to explore another region of the U.S. or an international destination with a group of your classmates and an SJSU leader during spring break or summer!

For further information contact the Study Abroad and Away (SAA) team:

Study Abroad and Away (SAA)

408-924-6128

spartansabroad@sjsu.edu

www.sjsu.edu/current/studyabroad

Summer Session

Summer Session allows both matriculated and non-matriculated (i.e. Open University) students to enroll in summer classes at San José State University. Credit earned may be applied to residence unit requirements for previously matriculated students.

For further information concerning Summer Session, contact Professional and Global Engagement.

Student Union West

408-924-2670

professionaled@sjsu.edu

www.sjsu.edu/current/summer

Testing Office

Information on TEAS (Test of Essential Academic Skill); CLEP (College Level Exam Program); PPA (Precalculus Proficiency Assessment); graduate examinations (GRE, LSAT, MCAT, etc.), including registration materials.

Services include, but are not limited to, make-up tests; proctored examinations; as well as Waiver Exams (American Institutions, U.S. History) and Credit by Exam.

Testing Office

Industrial Studies (IS) 228
408-924-5980
testing-office@sjsu.edu
testing.sjsu.edu

Tower Card

- The Tower ID Card with the student's photo is issued to students who pay the campus fees. Paper IDs are available to students who request them for other programs, i.e., Open University and Special Session.
- To obtain an SJSU Tower Card, students must present a valid driver's license, state ID (issued by the DMV), passport, or other government-issued ID at the Tower Card Window located in the Student Services Center.
- To avoid a long wait in line, upload your photo online at myid.sjsu.edu. You may pick up your card after you receive an email approving your submitted photo.
- If newly admitted students upload their photos on time, you may receive your Tower Cards during orientation.
- You are required to use this card as student identification to access services at the Event Center, Student Wellness Center, Student Services Center (including Admissions, Bursar's Office, Financial Aid and Scholarship Office, and Office of the Registrar), Career Center, MLK Library, Santa Clara County Valley Transportation Authority (buses and light rail) as well as to obtain parking permits and other student services.
- Replacement ID cards are \$20.
- Visit sjsu.edu/bursar/students-parents/tower-card.php for more information.

Bursar's Office

Student Services Center (SSC)
408-924-1601
bursar@sjsu.edu
Live Chat available online at specified hours.

Transfer Advising

Prospective Students

Student Outreach and Recruitment
Student Services Center (SSC)
408-924-2564
www.sjsu.edu/soar/

Admitted and Continuing Students - GE, graduation requirements and university policy (See the college specific student success center for your specific major.)

Transportation Alternatives

Don't spend your semester stuck in traffic. Visit Transportation Solutions to explore ways to make your commute more enjoyable and environmentally-friendly. Transportation Solutions provides expert advice on how to use alternative commute options such as carpooling, public transit, and bicycling to get to campus.

Associated Students Transportation Solutions

TS Center is located in Student Union East Wing

First floor, Suite 1800
408-924-RIDE (7433)
www.sjsu.edu/as/departments/transportation-solutions/

Undergraduate Admission Counseling

- No appointments are needed. Students are seen on a first-come, first-serve basis
- All applicants: use access information sent to you by the Undergraduate Admissions office.
- Apply online at Calstate.edu/apply for undergraduate and graduate admission.
- Receive information on admission requirements and information on majors offered at SJSU.
- Get help with questions about the undergraduate admission process or about your admission status.
- For campus tours, by appointment only, please go to SOAR or call the Welcome Center at 408-924-2786.
- Pick up campus directions and self-guided tour map.

Student Outreach and Recruitment (SOAR)

outreach@sjsu.edu
408-924-2564

Veterans Resource Center

The Veterans Resource Center (VRC) is designed as a one-stop resource that plays a primary role in serving the university's growing community of veterans and military students. The one-stop VRC is dedicated to assisting eligible student Veterans, Reservists, National Guard, Active Duty, and dependents with state/federal education benefits and certification, campus resources, and intentional student programs that aid in the transition from military to education to career.

Student Union Building, First floor, Room 1500
408-924-8129
veterans@sjsu.edu
www.sjsu.edu/veterans

Winter Session

Both matriculated and non-matriculated students may enroll in this session. Credit earned may be applied to residence unit requirements for previously matriculated students.

For further information concerning Winter Session, contact the Professional and Global Engagement.

Student Union West
408-924-2670
professionaled@sjsu.edu
www.sjsu.edu/current/winter

Writing Center

The San José State University Writing Center offers a variety of resources to help students become better writers, and all our services are free for SJSU students. Our mission is to enhance the writing skills of SJSU students so they can communicate clearly in any setting (informal, academic, or professional). All our writing tutors have gone through a rigorous hiring process, and they are well trained to assist all students at all levels within all disciplines to become better writers. We accomplish this goal through offering the following services:

- in-person tutoring appointments;
- online drop-in tutoring sessions (open lab);
- online tutoring appointments (conducted via Zoom);
- one-hour workshops on various writing topics;
- numerous online resources, including videos, handouts, and a blog;
- special programming, such as intensive workshops for graduate students.

Contact Information:

www.sjsu.edu/writingcenter

writingcenter@sjsu.edu

408.924.2308

Location:

Second Floor, MLK Library

Disclaimer

Changes of Rules and Policies

Although every effort has been made to assure the accuracy of the information in this catalog, students and others who use this catalog should note that laws, rules, and policies change from time to time and that these changes may alter the information contained in this publication.

Changes may come in the form of statutes enacted by the Legislature, rules and policies adopted by the Board of Trustees of the California State University, by the chancellor or designee of the California State University, or by the President or designee of the university. It is not possible in a publication of this size to include all of the rules, policies and other information that pertain to students, the institution, and the California State University. More current or complete information may be obtained from the appropriate department, school, or administrative office.

Nothing in this catalog shall be construed as, operate as, or have the effect of an abridgment or a limitation of any rights, powers, or privileges of the Board of Trustees of the California State University, the chancellor of the California State University, or the President of the university. The trustees, the chancellor, and the president are authorized by law to adopt, amend, or repeal rules and policies that apply to students. This catalog does not constitute a contract or the terms and conditions of a contract between the student and the university or the California State University. The relationship of students to the university and the California State University is one governed by statute, rules, and policy adopted by the legislature, the trustees, the chancellor, the presidents and their duly authorized designees.

The annual update of SJSU policies is recommended as an up-to-date source of information on course offerings, general education, registration procedures, schedule of fees and other pertinent information on policies and procedures.

Information in this academic catalog is subject to change.

Directory | Faculty & Administration | Leadership

Archived Catalogs

PDF Catalogs (2008 to Present)

Links to catalogs prior to 2008 can be found in College Source.

- 2008-2010 Catalog.pdf (Print data unavailable)
- 2010-2012 Catalog.pdf (Print data unavailable)
- 2012-2013 Catalog.pdf (Print data unavailable)
- 2013-2014 Catalog.pdf (Printed on July 10, 2013)
- 2014-2015 Catalog.pdf (Printed on June 9, 2014)
- 2015-2016 Catalog.pdf (Printed on July 14, 2015)
- 2015-2016 Catalog Addendum.pdf (Printed September 2015)
- 2016-2017 Catalog.pdf (Printed on June 10, 2016)
- 2016-2017 Catalog Addendum.pdf (Printed on October 10, 2016)
- 2017-2018 Catalog.pdf (Printed on July 7, 2017)
General Education (GE) Extract for Spring 2018 & Earlier
- 2018-2019 Catalog.pdf (Printed on June 1, 2018)
General Education (GE) Extract for Fall 2018-Spring 2019
- 2019-2020 Catalog.pdf (Printed on July 1, 2019)
- 2020-2021 Catalog.pdf (Printed on June 4, 2020)
- 2021-2022 Catalog.pdf (Printed on June 29, 2021)
- 2022-2023 Catalog.pdf (Printed on July 5, 2022)
- 2023-2024 Catalog.pdf (Printed on June 26, 2023)

Online Catalogs (2019 to Present)

The below online version(s) of the academic catalog include(s) updates and corrections made after the printed date.

Institutional Learning

University Learning Goals | Values | Program Learning Outcomes | GE Learning Goals | Course Learning Outcomes

Mission

Honoring our roots as the first public university in the West, SJSU is an empowering institution enrolling historically underserved students, driving inclusion, and embracing talent from diverse cultures from our region and across the globe. SJSU's spirit of innovation and creativity drives academic excellence, teaching, research, and service in a learning environment where all students belong. Together, we nurture leaders to thrive and transform our community, Silicon Valley, and the world.

The significance of centering an image of students at Commencement is to remind us that student success is at the center of our mission, goals, and outcomes assessment efforts.

University Learning Goals (ULGs)

Developed in 2013 and revised in 2017, University Learning Goals (ULG) define the skills and knowledge of San José State University graduates at both the graduate and undergraduate level. These goals help students understand the purpose of their time at SJSU and guide academic planning and curriculum development.

The SJSU experience is designed to ensure that students have the power to be lifelong learners and have successful futures. At the baccalaureate level this preparation begins as students complete their general education requirements, and continues through SJSU Studies and their majors. For graduate students, these goals are integrated throughout their coursework and research.

University Goals Power Lifelong Learning

The student learning experience at SJSU is centered on helping students achieve five important goals. These goals represent the skills and knowledge that power lifelong learning and career success. San José State University graduates will have developed:

- 1. Social and Global Responsibilities.** An ability to consider the purpose and function of one's degree program training within various local and/or global social contexts and to act intentionally, conscientiously, and ethically with attention to diversity and inclusion.
- 2. Specialized Knowledge.** Depth of knowledge required for a degree, as appropriate to the discipline.
- 3. Intellectual Skills**
 - a. Fluency with specific theories, assumptions, foundational knowledge, analytical and interpretive protocols, tools, and technologies appropriate to the discipline or field of study.
 - b. Skills necessary for mastery of a discipline at a level appropriate to the degree and leading to lifelong learning, including critical and creative thinking and practice, effective communication, thorough and ethical information gathering and processing, competence with quantitative and/or qualitative methodologies, and productive engagement in collaborative activities.
 - c. For undergraduate students in a baccalaureate program: an understanding of critical components of broad academic areas, including the arts, humanities, social sciences, quantitative reasoning, and sciences.

4. Integrative Knowledge and Skills

- a. Mastery in each step of an investigative, creative, or practical project (e.g., brainstorming, planning, formulating hypotheses or complex questions, designing, creating, completing, and communicating) with integration within and/or across disciplines.
- b. An ability to articulate the potential impacts of results or findings from a particular work or field in a societal context.

5. Applied Knowledge. An ability to apply theory, practice, and problem solving to new materials, settings, and problems.

Values

We are:

- Champions for student success
- Visionary and community-minded
- Inclusive and equity-minded
- Trustworthy and act with integrity and accountability
- Collaborative and embrace teamwork

Find out more about how we use our values as a framework achieving our mission and vision.

Program Learning Outcomes (PLOs)

- Graduate Program Learning Outcomes
- Undergraduate Program Learning Outcomes
- Co-Curricular Programs: Service Departments and Services Program Learning Goals

University Undergraduate Graduation Requirement

General Education Learning Goals

Students who complete the General Education curriculum should be able to demonstrate the knowledge, skills and values described below:

Goal 1: To develop students' core competencies for academic, personal, creative, and professional pursuits. Goal 1 has five learning outcomes (PLOs 1-5):

PLO 1. [Oral Communication]

Create and deliver logically-organized, well-supported, and compelling messages both in presentation and in conversation for specific audiences and diverse settings.

PLO 2. [Written Communication]

Develop and practice a writing process that accounts for the goals, dynamics, and genres of written communication, with special attention to the conventions of writing at the university.

PLO 3. [Critical Thinking]

Identify and analyze a subject/topic/issue/problem of significance by evaluating the merits of different positions or perspectives; support the analysis with relevant evidence and information while stating assumptions; and draw evidence-based conclusions.

PLO 4. [Quantitative Reasoning]

Analyze, interpret, and represent quantitative information in various forms to examine a question; explain the processes behind data collection and generation; and communicate evidence in support of an argument or purpose while stating assumptions, limitations, and biases, and drawing appropriate conclusions.

PLO 5. [Information Literacy]: Identify information needs, locate and access relevant and credible information while accounting for bias, and use information legally and ethically.

Goal 2: To enact the university's commitment to diversity, inclusion, and justice by ensuring that students have the knowledge and skills to serve and contribute to the well-being of local and global communities and the environment. Goal 2 has two learning outcomes (PLOs 6 and 7):

PLO 6. [Diversity, Inclusion, and Justice]

Examine diverse cultures, communities, and environments; explore different perspectives; analyze connections to issues of justice/injustice; and prepare to live and work responsibly and cooperatively in multicultural societies.

PLO 7. [Civic and Global Engagement]

Engage with global perspectives and knowledge; develop civic skills, interests, and values; and apply knowledge, skills and values to multicultural, community, and environmental interests.

Goal 3: To offer students integrated, multidisciplinary, and innovative study in which they pose challenging questions, address complex issues, and develop cooperative and creative responses. Goal 3 has two learning outcomes (PLOs 8 and 9):

PLO 8. [Integration and Application]

Integrate and apply knowledge and methods from more than one discipline or area of study to explore a complex question, address an issue, or produce a creative work.

PLO 9. [Reflection and Self-Assessment]

Evaluate and reflect on one's own learning while building on prior knowledge and life experiences.

Developing Educated Persons

Each of the General Education areas develop students to become educated persons.

Fundamental Skills of an Educated Person

Fundamental Skills courses (A1-3, B4) develop students' communication and analytical skills. An educated person can communicate ideas effectively verbally and in writing. An educated person must also have strong reasoning powers in order to analyze all types of information. Per CSU policy, each Fundamental Skills course must be passed with a grade of C- or better to fulfill graduation requirements.

Fundamental Knowledge of an Educated Person

Fundamental Knowledge courses (B1-3, C1-2, D, E, F) develop students' understanding and appreciation of the fundamentals of science, arts and humanities, and the forces that shape the individual and modern society throughout the lifespan. This fundamental knowledge is crucial to understanding more advanced topics, including a major field of study.

Integrated Knowledge of an Educated Person

SJSU Studies courses (R, S, V) help students integrate knowledge between and among disciplines. An educated person is able to apply concepts and methods learned in one area to other areas as part of a lifelong learning process. SJSU Studies courses develop abilities that enable students to live and work intelligently, responsibly, and cooperatively in multicultural societies and to develop abilities to address complex issues and problems using disciplined analytical skills and creative techniques.

American Institution Learning Outcomes

US1. American Institutions - U.S. History

To fulfill the requirements for U.S. History, students should be able to explain and evaluate the principal events, developments, and ideas covering a minimum time span of approximately one hundred years in all the territories now in the United States (including external regions and powers as appropriate).

As students explore the historical development of the United States, they should be able to evaluate and synthesize different positions, support analysis with relevant evidence, and create evidence-based interpretations of:

1. Major subtopics in United States history, such as Native Americans and their interactions with the U.S. government; slavery and its legacies; the foundational ideals of the American Republic; colonization and territorial expansion; economic development; political reform and reaction; immigration to the United States and the experiences of immigrants; foreign relations; wars and conflicts; movements including religious, labor, civil rights, feminist, and environmental.
2. Multiple perspectives related to, for example, diverse cultures, communities, and environments; age, gender, and sexuality; the history and experience of racial, ethnic, and religious minorities; the experiences of people with disabilities; and patterns of race and class relations.

US2. American Institutions - U.S. Constitution

To fulfill the requirements for U.S. Constitution, students should be able to explain how political decisions are made, what the consequences of such decisions are for individuals and society, and how individuals and groups may affect the decision-making process. As students explore the meaning and content of the democratic process as it has evolved in the United States and California, at a minimum, they should be able to evaluate:

1. The foundations of the political system, including the evolution of the U.S. Constitution, political culture, separation of powers, federalism, and relations among various levels of government. Students will also analyze the evolving institutions of government, including a study of the powers of the President, Congress, and the Judiciary as well as the bureaucracy;
2. The links between the people and the political system of the United States, including voting, and other forms of participation, as well as other content areas such as tribal governments, political parties, interest/lobbying groups, and public opinion and socialization. Students should also analyze the rights and obligations of citizens, which may include the tension between various freedoms of expression, including issues related to censorship and freedom of speech, due process and the maintenance of order; and
3. Connections to issues of justice/injustice, including the efforts to end racial, gender and other forms of discriminatory practices in both the public and private sectors.

US3. American Institutions - California Government

To fulfill the requirements for California government, students should be able to explain how political decisions are made at the state and local level, taking into account the diverse cultures, communities, and environments of California, including the impact of demographic changes on the history and politics of the state and the nation.

As students explore the operations of government at the state level, they should be able to evaluate:

1. The foundations of the California political system, the similarities and differences between the California and U.S. Constitutions, and the relationship between state and local government in California; and
2. The evolving relationships of state and local government with the federal government, such as the relationship with tribal governments; the generation and resolution of conflicts; the establishment of cooperative processes under the constitutions of both the state and nation; and the political processes involved.

Physical Education Goals

The goals of the Physical Education Requirement are to:

1. Provide a fundamental understanding of the influence physical activity has on physical and mental well-being;
2. Promote development of a repertoire of skills for constructive leisure activity and a physically active lifestyle important to maintaining health;
3. Provide an understanding of the guidelines for developing and maintaining physical fitness throughout the lifespan;
4. Provide exposure to a variety of lifetime fitness activities and sports; and
5. Enhance the student's liberal arts education and develop a well-rounded individual.

Course Learning Outcomes (CLOs)

Course Learning Outcomes are identified on each course syllabus (per University Policy S16-9).

Fundamental Skills of an Educated Person (A1-3, B4)

Fundamental Skills courses develop students' communication and analytical skills. An educated person can communicate ideas effectively verbally and in writing. An educated person must also have strong reasoning powers in order to analyze all types of information. Per CSU policy, each Fundamental Skills course must be passed with a grade of C- or better to fulfill graduation requirements.

Learning Outcomes

Oral Communication (A1)

Oral Communication courses cultivate an understanding of the social, psychological, political and practical significance of communication, with special emphasis on the roles of public communication in a free society. Area A1 courses emphasize the content as well as the form of communication and focus on the communicative process from a rhetorical perspective. By researching, developing, and delivering, at minimum, three distinct extemporaneous oral presentations, students will develop their own sense of voice, speaking with confidence in ways that reflect their unique perspective and identities while respecting the freedom of expression of all members of the community.

Upon successful completion of an Area A1 course, students should be able to:

1. Identify and critically evaluate socially significant topics, then compose and deliver extemporaneous oral presentations on these topics;
2. Engage in critical and analytical listening;
3. Analyze audiences and adapt oral presentations to accomplish the purpose of the speech;
4. Create a clear central message that demonstrates an understanding of socially significant issues; and
5. Demonstrate the ethical responsibilities of a public speaker by addressing the economic, legal, and social aspects of topics; and by locating and evaluating sources and integrating research through appropriate citation.

Written Communication I (A2)

Written Communication I courses cultivate an understanding of the writing process and the goals, dynamics, and genres of written communication, with special attention to the nature of writing at the university. Students will develop college-level reading abilities, rhetorical sophistication, and writing styles that give form and coherence to complex ideas and feelings.

Upon successful completion of an Area A2 course, students should be able to:

1. Demonstrate knowledge and understanding of the content, context, effectiveness, and forms of written communication;
2. Perform essential steps in the writing process (prewriting, organizing, composing, revising, and editing);
3. Articulate an awareness of and write according to the rhetorical features of texts, such as purpose, audience, context, and rhetorical appeals;
4. Integrate their ideas and those of others by synthesizing, explaining, analyzing, developing, and criticizing ideas effectively in several genres; and
5. Demonstrate college-level language use, clarity, and grammatical abilities in writing.

Critical Thinking and Writing (A3)

Critical Thinking and Writing courses develop students' understanding of the relationship of language to logic. By engaging students in complex issues requiring critical thinking and effective argumentation, A3 courses develop students' abilities to research and analyze important topics and to construct their own arguments on issues that generate meaningful public debate and deliberation. Courses include explicit instruction and practice in inductive and deductive reasoning as well as identification of formal and informal fallacies of language and thought. Students will develop their abilities to distinguish fact from judgment and belief from knowledge; to articulate elementary inductive and deductive processes; and to recognize common logical errors or fallacies of language and thought. Students will develop the ability to analyze, criticize, and advocate complex ideas; reason inductively and deductively; research and rebut information and arguments; and reach well-supported factual conclusions and judgments.

Upon successful completion of an Area A3 course, students should be able to:

1. Locate, interpret, evaluate and synthesize evidence in a comprehensive way, including through library research; and integrate research findings into oral and written arguments through appropriate citation and quotation;
2. Use a full range of rhetorical and logical strategies to articulate and explain their positions on complex issues in dialogue with other points of view;
3. Identify and critically evaluate the assumptions in and the contexts of arguments; and
4. Use inductive and deductive logic to construct valid, evidence-supported arguments and draw valid conclusions.

Mathematics/Quantitative Reasoning (B4)

Area B4 courses develop students' abilities to reason quantitatively, practice computational skills, and explain and apply mathematical and/or quantitative reasoning concepts to solve problems at the college level.

Upon successful completion of an Area B4 course, students should be able to:

1. Use mathematical methods to solve quantitative problems, including those presented in verbal form;
2. Interpret and communicate quantitative information using language appropriate to the context and intended audience;
3. Reason, model, draw conclusions, and make decisions based on numerical and graphical data; and
4. Apply mathematical or quantitative reasoning concepts to solve real life problems.

Fundamental Knowledge of an Educated Person (B1-3, C1-2, D, E, F)

Fundamental Knowledge courses develop students' understanding and appreciation of the fundamentals of science, arts and humanities, and the forces that shape the individual and modern society throughout the lifespan. This fundamental knowledge is crucial to understanding more advanced topics, including a major field of study.

Learning Outcomes

Physical and Life Science (B1, B2, B3)

Physical and life science courses develop students' understanding of the scientific method as a continuous and adaptive process of discovery and communication about the physical universe and its life forms. These courses equip students with the quantitative and qualitative methods and skills necessary for understanding and applying scientific theories, concepts, and data about both living and non-living systems.

Upon successful completion of an Area B1-B3 course, students should be able to:

1. Demonstrate knowledge of scientific theories, concepts, and data used in the physical and life sciences;
2. Apply scientific principles and communicate in ways appropriate to the discipline about the process and results of scientific discovery;
3. Access, critically evaluate, and represent scientific information in various forms and draw appropriate conclusions; and
4. Use methods derived from current scientific inquiry to form evidence-based opinions about science-related matters of personal, public, and ethical concern.

Arts and Humanities (C)

Across the disciplines in Area C coursework, students cultivate and refine their affective, cognitive, and expressive faculties by studying works of the human intellect and imagination. Area C courses help students to respond subjectively as well as objectively to aesthetic experiences and to develop an understanding of the integrity of both emotional and intellectual responses. In their intellectual and subjective considerations, students develop a better understanding of the interrelationship between the self and the creative arts and the humanities in a variety of cultures.

Arts (C1)

Students develop their understanding of the historical and cultural contexts in which works of art and humanistic inquiry are created and interpreted. Courses enable students to participate in social and cultural communities associated with artistic and humanistic endeavors, thus enriching their lives and promoting lifelong appreciation of the humanistic and creative arts.

Upon successful completion of a C1 course, students should be able to:

1. Identify aesthetic qualities and processes that characterize works of the human intellect and imagination;
2. Explore and articulate their own subjective aesthetic and intellectual responses to such works;
3. Analyze the role and impact of the creative arts in culture and on the interrelationship of self and community; and
4. Research and apply relevant aesthetic criteria and/or artistic conventions in effective written responses to works of art.

Humanities (C2)

Upon successful completion of a C2 course, students should be able to:

1. Analyze and understand works of philosophical and humanistic importance, including their temporal and cultural dimensions;
2. Explore and articulate their own subjective aesthetic and intellectual responses to such texts;
3. Analyze and assess ideas of value, meaning, and knowledge, as produced within the humanistic disciplines; and
4. Research and write effective analyses of works of the human intellect and imagination.

Social Sciences (D)

Students learn from Area D courses that human behavior is inextricably interwoven with social, political, and economic institutions. By exploring the principles, methodologies, values systems, and ethics employed in social scientific inquiry, students come to appreciate processes of social change and social continuity, the role of human agency in those social processes, and the forces that engender social cohesion and fragmentation.

Upon successful completion of an Area D course, students should be able to:

1. Demonstrate understanding of the ways in which social institutions, culture, and environment shape and are shaped by the behavior of individuals, both past and present;
2. Compare and contrast the dynamics of two or more social groups or social systems in a variety of historical and/or cultural contexts;
3. Place contemporary social developments in cultural, environmental, geographical, or historical contexts; and
4. Draw on social/behavioral science information from various perspectives to formulate applications appropriate to contemporary social issues.

Human Understanding and Development (E)

Area E courses prepare students for lifelong learning as well as addressing challenges confronting students who are entering the complex social system of the university. Courses help students understand themselves as integrated physiological, social, and psychological beings capable of formulating strategies for lifelong personal development.

Upon successful completion of an Area E course, students should be able to:

1. Describe and analyze the interrelationships among physiological, social/cultural, and psychological dimensions of human well-being;
2. Think critically and communicate effectively about ethics and integrity in academic and non-academic settings;
3. Reflect upon their own experiences along dimensions of well-being and engage in activities that promote human wellness across the lifespan; and
4. Know how to access social and academic resources that enhance learning and facilitate positive interpersonal relationships with diverse groups and individuals.

Ethnic Studies (F)

Upon successful completion of an Area F course, students should be able to discover and critically evaluate significant topics, then compose and deliver oral and/or media-driven presentations on the topics as related to the group(s) studied in this class. Area F emphasizes comparative concepts and frameworks in ethnic studies with a focus on historically defined racialized core groups: Native Americans, African Americans, Asian Americans, and Chicanx/Latinx Americans.

Approved courses shall meet at least three of the five following student learning outcomes: Students shall be able to:

1. Analyze and articulate concepts such as race and racism, racialization, ethnicity, equity, ethno-centrism, eurocentrism, white supremacy, self-determination, liberation, decolonization, sovereignty, imperialism, settler colonialism, and anti-racism;
2. Apply ethnic studies theory and knowledge to describe and actively engage with anti-racist and anti-colonial issues and the practices and movements that have and continue to facilitate the building of a more just and equitable society;
3. Critically analyze the intersection of race and racism as they relate to class, gender, sexuality, religion, spirituality, national origin, immigration status, ability, tribal citizenship, sovereignty, language, and/or age;
4. Critically review how struggle, resistance, racial and social justice, solidarity, and liberation are relevant to current and structural issues such as communal, national, international, and transnational politics as, for example, in immigration, reparations, settler-colonialism, multiculturalism, language policies; and,
5. Describe and actively engage with anti-racist and anti-colonial issues and the practices and movements that have contributed to the building of a more just and equitable society.

Integrated Knowledge of an Educated Person (R, S, V, WID)

SJSU Studies courses help students integrate knowledge between and among disciplines. An educated person is able to apply concepts and methods learned in one area to other areas as part of a lifelong learning process. SJSU Studies courses develop abilities that enable students to live and work intelligently, responsibly, and cooperatively in multicultural societies and to develop abilities to address complex issues and problems using disciplined analytical skills and creative techniques.

Learning Goals

Science (R): Earth, Environment, and Sustainability

In Area R courses, students apply knowledge of scientific theories and concepts as well as quantitative reasoning to explore the relationship between humans and the natural environment. Students achieve an understanding of the role that science plays in addressing complex issues, as well as the potential limits of scientific endeavors and the value systems and ethics associated with scientific inquiry.

Upon successful completion of an Area R course, students should be able to:

1. Apply scientific principles and the scientific method to answer questions about earth, the environment, and sustainability while recognizing the limits of both the method and principles;
2. Apply mathematical or quantitative reasoning concepts to the analysis and generation of solutions to issues of earth, the environment, and sustainability;
3. Communicate a scientific finding, assertion, or theory to a general audience with the integrity and rigor of the underlying science; and
4. Explain ethical, social, and civic dimensions of scientific inquiry.

Social Sciences (S): Self, Society and Equality in the United States

In Area S courses, students study the interrelationships of individuals, racial groups, and cultural groups to understand and appreciate issues of equality, structured inequality and justice in the United States. By exploring different perspectives and helping students articulate and discuss their own values, Area S courses prepare students to live and work responsibly and cooperatively in a multicultural society.

Upon successful completion of an Area S course, students should be able to:

1. Describe how identities are shaped by cultural and societal influences within contexts of equality and inequality. Examples include, but are not limited to, race, ethnicity, gender identity, gender expression, sexual orientation, religion, disability status, age, generation, regional origin, national identity, language, intersectionalities;
2. Analyze historical, economic, political, or social processes that shape diversity, equality, and structured inequalities in the U.S. and reflect on one's own identities and positions within these structures;
3. Evaluate social actions which have or have not led to greater equality and social justice in the U.S.; and
4. Engage in constructive interactions about social issues in the U.S. within the framework of equality and inequalities.

Humanities (V): Cultures and Global Understanding

Courses in Cultures and Global Understanding examine multiple aspects of human expression in cultures and societies outside the United States, including how such cultures develop and influence one another as well as U.S. cultures and societies.

After successfully completing the course, students shall be able to:

1. Analyze historical, social, and/or cultural significance of creative works of human expression (examples include, but are not limited to, written works, images, media, music, dance, technologies, designs), from at least one cultural tradition outside the United States;
2. Examine how creative works of human expression [as defined in #1] outside the United States have influenced the United States' cultures;
3. Explain how a culture outside the U.S. has changed in response to internal and external influences; and
4. Appraise how the study of creative works of human expression from outside the United States shapes one's own understanding of cultural experiences and practices.

Writing in the Disciplines (WID)

Writing in the Disciplines (WID) courses develop students' abilities to communicate effectively in their major course of study and in their careers. With an emphasis on critical thinking, these upper-division core courses advance students' understanding of the genres, audiences, and purposes of college writing while preparing them for successful communication in their chosen professions.

Upon successful completion of a Writing in the Disciplines course, students should be able to:

1. Explain, analyze, develop, and critique ideas effectively, including ideas encountered in multiple readings and expressed in different forms of discourse;
2. Organize and develop complete discipline-specific texts and other documents for both professional and general audiences, using appropriate editorial and citation standards;
3. Locate, organize, and synthesize information effectively to accomplish a specific purpose, and to communicate that purpose in writing; and
4. Produce discipline-specific written work that demonstrates upper-division proficiency in language use, grammar, and clarity of expression.

Undergraduate Program Learning Outcomes

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z

Graduates will be able to satisfy the following program learning outcomes.

A

Advertising, BS

PLO 1 Demonstrate knowledge of the diversity of groups in a global society in relationship to communications.

PLO 2 Demonstrate the ability to think critically, creatively and independently.

PLO 3 Write correctly and clearly in forms and styles appropriate for the communications professions, audiences, and purposes they serve.

PLO 4 Demonstrate the ability to use tools and technologies appropriate for the communications professions in which they work.

Aerospace Engineering, BS

PLO 1 Problem Solving - Identify, formulate, and solve complex aerospace engineering problems through application of mathematics, science, and engineering principles.

PLO 2 Design to Meet Requirements and Constraints - Design aerospace vehicles that meet specified requirements and subject to public health, safety and welfare, global, cultural, social, environmental, and economic constraints.

PLO 3 Communicate Effectively - Communicate effectively with a range of audiences.

PLO 4 Ethical and Professional Responsibilities - Recognize ethical and professional responsibilities in engineering situations and make informed judgments, considering the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Teamwork - Function effectively on a team, whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Experiments and Data Analysis - Design and conduct appropriate experiments, analyze and interpret data, and use engineering judgment to draw conclusions.

PLO 7 Knowledge Acquisition - Acquire knowledge as needed, using appropriate learning strategies.

African American Studies, BA

PLO 1 Describe global linkages between African Americans and other people of African descent throughout the world, articulate the impact of slavery of African peoples in U.S. society and explain how American society and its institutions have historically shaped Black Americans/African Americans.

PLO 2 Describe and explain African-centered theories, concepts, and research.

PLO 3 Critique historical and contemporary research literature, formulate research, interpret historical records, documents, and audiovisual materials, collect and analyze data, and draw conclusions that follow logically from the analysis.

PLO 4 Demonstrate strong oral and written communication skills.

PLO 5 Apply knowledge on behalf of the university, local, state, regional, national, and/or global community.

Animation & Illustration, BFA

PLO 1 Create drawn images that demonstrate an understanding of the principles of color, design, optics, and perspective and the application of basic skills in life drawing and the physics of motion.

PLO 2 Demonstrated ability in life drawing, applied knowledge of both digital and traditional painting, and intermediate studies in the physics of motion. Create sequential narratives that apply storytelling principles, and demonstrate the ability to work cooperatively.

PLO 3 Create and develop original narrative, sequential projects-short films and tests incorporating visual development, modeling, storyboarding and animation.

PLO 4 Apply professional standards and practices including proficiency in visual development, modeling, animation, or storyboarding.

PLO 5 Demonstrate an understanding of art, film and animation history, theory, and criticism from a variety of perspectives, including those of art historians, animators and filmmakers, by creating, drawing, and applying knowledge to classroom tasks.

Anthropology, BA

PLO 1 Understanding culture as the distinguishing phenomenon of human life, and the relationship of human biology and evolution.

PLO 2 Awareness of human diversity and the ways humans have categorized diversity.

PLO 3 Knowledge of the significant findings of archaeology, cultural anthropology, and physical anthropology, and familiarity of the important issues in each sub-discipline.

PLO 4 Knowledge of the history of anthropological thought and its place in modern intellectual history.

PLO 5 Comprehension of migration, colonialism, and economic integration as significant phenomenon shaping global society.

PLO 6 Ability to access various forms of anthropological data and literature.

PLO 7 Awareness of importance and value of anthropological knowledge in contemporary society, and the ability to apply it to social issues.

PLO 8 Knowledge of the research methods of the sub-disciplines of anthropology, and the ability to apply appropriate research methods in at least one sub-discipline.

PLO 9 Ability to present and communicate anthropological knowledge and the results of anthropological research to different audiences.

PLO 10 Knowledge of political and ethical implications of social research.

Applied Mathematics, Concentration in Applied and Computational Mathematics, Applied Math Track, BS

PLO 1 Communicate applied mathematics concepts in writing.

PLO 2 Analyze and critique proofs and theory in applied mathematics.

PLO 3 Perform computations in applied mathematics.

Applied Mathematics, Concentration in Applied and Computational Mathematics, Discrete Math Track, BS

PLO 1 Communicate applied discrete mathematics concepts in writing.

PLO 2 Analyze and critique proofs and theory in applied discrete mathematics.

PLO 3 Perform computations in applied discrete mathematics.

Art History and Visual Culture, BA

PLO 1 Recognize and identify significant artworks and of the canon of historical periods customary in Western and Non-Western traditions.

PLO 2 Translate visual perception into verbal analysis, using a variety of strategies to clearly communicate with an intended audience.

PLO 3 Describe, analyze and explain artworks from differing historical and cultural contexts, using terms and concepts appropriate to specific historical and contemporary cultures.

PLO 4 Investigate and communicate art historical information through research, documentation, and clearly written arguments that integrate appropriate theoretical perspectives.

PLO 5 Discuss the theoretical, historiographic, and professional foundations of the discipline of Art History and apply this understanding to explaining and solving research problems.

Art, BFA (Concentrations in Digital Media Art, Photography, Pictorial Art, and Spatial Art)

PLO 1 Create Original Artwork: Generate original artwork across various media and styles that demonstrates creativity, innovation, and expertise of artistic techniques.

PLO 2 Develop Critical Thinking, Creative Capacity, and Problem-Solving Skills: Develop critical thinking, creative capacity, and problem-solving skills through a variety of generative methods, such as brainstorming, hypothesizing, modeling, play, and experimentation, to conceptualize artwork with specific goals, purposes, or

messages.

PLO 3 Apply Visual Literacy and Art Historical Knowledge: Apply visual literacy skills and knowledge of art history to produce, interpret, analyze, and effectively communicate the meanings of various materials and media.

PLO 4 Demonstrate Awareness of Art's Societal and Global Significance: Demonstrate awareness of art's unique role in offering new perspectives, addressing social issues, engaging diverse cultural practices, and providing a multifaceted global view of scholarship through the generation and evaluation of artwork.

PLO 5: Prepare for Professional Careers in Art: Prepare for careers as creative arts professionals by (1) producing a portfolio of professional-level work, (2) generating professional communication documents that illuminate their process, skills, and ideas, and (3) actively participating in the planning, coordinating, and execution of solo and collaborative art and research projects.

Art, Studio Practice Concentration, BA

PLO 1 Demonstrate Proficiency in Artistic Practices: Demonstrate increasing proficiency in artistic skill-based practices, utilizing diverse materials, tools, and media for planning, designing, and realizing artistic work.

PLO 2 Foster Critical Thinking, Creative Capacity, and Problem-Solving Skills: Foster critical thinking, creative capacity, and problem-solving skills through a variety of generative methods, such as brainstorming, hypothesizing, modeling, play, and experimentation, to conceptualize artwork with specific goals, purposes, or messages.

PLO 3 Apply Visual Literacy and Art Historical Knowledge: Apply visual literacy skills and knowledge of art history to produce, interpret, analyze, and effectively communicate the meanings of various materials and media.

PLO 4 Cultivate Awareness of Art's Societal and Global Significance: Cultivate awareness of art's unique role in offering new perspectives, addressing social issues, engaging diverse cultural practices, and providing a multifaceted global view of scholarship through the generation and evaluation of their artwork.

PLO 5: Prepare for Professional Careers in Art: Prepare for careers as creative arts professionals by (1) producing a portfolio of professional-level work, (2) generating professional communication documents that illuminate their process, skills, and ideas, and (3) actively participating in the planning, coordinating, and execution of solo and collaborative art and research projects.

Art, Studio Practice - Preparation for Teaching Concentration, BA

PLO 1: Demonstrate Proficiency in Interdisciplinary Art Practices: Demonstrate proficiency in interdisciplinary skill-based art practices using diverse materials, tools, and media for personal artwork and adapt these skills to plan, design, and deliver comprehensive art education.

PLO 2: Foster Critical Thinking, Creative Capacity, and Problem-Solving Skills: Foster critical thinking, creative capacity, & problem solving skills through a variety of generative methods such as brainstorming, hypothesizing, modeling, play, and experimentation for conceptualizing work that has an intended goal, purpose, or message.

PLO 3: Apply Visual Literacy and Art Historical Knowledge: Apply visual literacy skills and knowledge of art history to produce, interpret, analyze, and effectively communicate the meanings of various materials and media through various communication strategies, while integrating these concepts into art education practices.

PLO 4: Promote Art's Cultural and Global Significance: Demonstrate awareness of art's unique role in offering new perspectives, addressing social issues, engaging diverse cultural practices, and providing a multifaceted global view of scholarship through the generation and evaluation of their work and promoting these findings through effective teaching methods.

PLO 5: Develop Comprehensive Art Education Strategies: Develop comprehensive knowledge, skills and understandings to design sequential learning experiences for all students through art curriculum development: instruction plans, and art experiences that maintain effective environments for student learning.

Asian American Studies, BA

PLO 1 Demonstrate a core competency in interdisciplinary knowledge of major concepts, theories, and methods in Asian American Studies (AAS). For specifics see below.

PLO 1A Explain the sociopolitical, historical, contemporary, and comparative formations of race and ethnicity.

PLO 1B Analyze systems of power and hierarchies associated with the intersections of race and ethnicity to class, gender, sexuality, religion, spirituality, national origin, immigration status, ability, sovereignty, language, health, and/or age to understand the diversity and complexity of Asian American populations.

PLO 2 Apply Asian American Studies theory and knowledge to the following:

PLO 2A Addressing anti-racist and anti-colonial issues;

PLO 2B Identifying practices and movements that have and continue to facilitate the building of a more just and equitable society.

PLO 3 Communicate knowledge in Asian American studies effectively and creatively-appropriate to purpose and audience in the following forms: written, visual and/or oral forms.

Aviation, BS

PLO 1 Demonstrate strong communication, critical thinking, and interpersonal skills

PLO 2 Use skills in team development, dynamics, and management to work as team players.

PLO 3 Demonstrate ethical behavior and concern for colleagues, society, and the environment.

PLO 4 Apply science, math, and management principles to solve problems in aviation.

PLO 5 Describe certification processes for an aviation professional.

PLO 6 Describe the theory of aircraft design, performance, operating characteristics, and maintenance.

PLO 7 Analyze and explain the role and regulations regarding aviation safety and human operations.

PLO 8 Describe the legal and labor issues in national and international aviation.

PLO 9 Describe meteorology and environmental issues as they relate to aviation.

B

Behavioral Science, BA

PLO 1 Provide opportunities for students to synthesize the perspectives of the disciplines of anthropology, psychology, and sociology.

PLO 2 Provide opportunities to apply the perspectives of the behavioral sciences to a variety of contemporary issues and professional settings.

Biological Sciences, BA

PLO 1 Demonstrate the ability to formulate hypotheses and design experiments to address a scientific question.

PLO 2 Demonstrate an understanding of the relevant content in their discipline.

PLO 3 Demonstrate laboratory or field skills in their discipline.

PLO 4 Demonstrate proficiency in scientific writing skills by effectively writing an advanced scientific paper.

PLO 5 Demonstrate proficiency in oral presentation skills by effectively presenting scientific research.

Biological Sciences, BS (Concentrations in Microbiology, BS, Molecular Biology, and Systems Physiology)

PLO 1 Demonstrate the ability to formulate hypotheses and design experiments to address a scientific question.

PLO 2 Demonstrate an understanding of the relevant content in their discipline.

PLO 3 Demonstrate laboratory or field skills in their discipline.

PLO 4 Demonstrate proficiency in scientific writing skills by effectively writing an advanced scientific paper.

PLO 5 Demonstrate proficiency in oral presentation skills by effectively presenting scientific research.

Biomedical Engineering, BS

PLO 1 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

PLO 2 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

PLO 3 Communicate effectively with a range of audiences.

PLO 4 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment

to draw conclusions.

PLO 7 Acquire and apply new knowledge as needed, using appropriate learning strategies.

Business Administration, BS

PLO 1 Business Knowledge. Recognize basic business principles and demonstrate discipline-specific competencies as applied to local and global environments;

PLO 2 Communication. Communicate ideas clearly, logically, and persuasively in oral and written format, using technology appropriately;

PLO 3 Ethical Awareness. Recognize, analyze, and articulate solutions to ethical issues that arise in business;

PLO 4 Teams and Diversity. Demonstrate the skills of effective teamwork and recognize the complexities and opportunities of working in diverse teams;

PLO 5 Critical Thinking. Critically evaluate business problems and apply appropriate evidence-based methods and technology to make informed decisions; and,

PLO 6 Innovation. Apply strategies and procedures to enable innovation.

C

Chemical Engineering, BS

PLO 1 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

PLO 2 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

PLO 3 Communicate effectively with a range of audiences.

PLO 4 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, considering the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Function effectively on a team, whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

PLO 7 Acquire and apply new knowledge as needed, using appropriate learning strategies.

Chemistry, BA

PLO 1.1 Students will be able to identify, formulate, and solve a range of chemistry problems (fundamental to complex) through application of mathematical, scientific, and chemical principles.

PLO 1.2 Students will be able to recognize, relate, and/or apply chemistry terms and concepts to propose and solve interdisciplinary and multidisciplinary real world problems.

PLO 2.1 Students will be able to develop an experiment to address a hypothesis using literature and execute the planned experiment using standard chemistry techniques.

PLO 2.2 Students will be able to acquire, record, and critically evaluate data through use of instrumentation and software, appropriate record keeping practices, figure preparation, and scrutiny of experimental results.

PLO 2.3 Students will be able to recognize and assess laboratory hazards, practice risk minimization, and conduct safe laboratory practices

PLO 3.1 Students will be able to explore, critique, and reflect on how chemistry relates to society, culture, and issues of equity and ethics that shape their scientific beliefs and identities.

PLO 3.2 Students will be able to identify as scientists within the scientific community through constructing peer reviews, engaging in collaborations, and participating in mentorship.

PLO 4.1 Students will be able to design and deliver engaging presentations on diverse chemistry topics in a professional manner and with clear, concise organization that demonstrates mastery of the topic.

PLO 4.2 Students will be able to integrate research findings into a concise original written report that either analyzes collected data and obtained results or reviews and reflects on published scientific work.

PLO 4.3 Students will be able to identify an audience and construct a message tailored to that audience and act as a science ambassador by conveying the importance of the research or topic of study.

PLO 4.4 Students will be able to prepare professional documents, such as résumés and cover letters, that accurately represent the students' skills and knowledge for graduate/professional school or potential future employers.

Chemistry, BS (Concentrations in General Chemistry and Biochemistry)

PLO 1.1 Students will be able to identify, formulate, and solve a range of chemistry problems (fundamental to complex) through application of mathematical, scientific, and chemical principles.

PLO 1.2 Students will be able to recognize, relate, and/or apply chemistry terms and concepts to propose and solve interdisciplinary and multidisciplinary real world problems.

PLO 2.1 Students will be able to develop an experiment to address a hypothesis using literature and execute the planned experiment using standard chemistry techniques.

PLO 2.2 Students will be able to acquire, record, and critically evaluate data through use of instrumentation and software, appropriate record keeping practices, figure preparation, and scrutiny of experimental results.

PLO 2.3 Students will be able to recognize and assess laboratory hazards, practice risk minimization, and conduct safe laboratory practices

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PLO 3.2 Students will be able to identify as scientists within the scientific community through constructing peer reviews, engaging in collaborations, and participating in mentorship.

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PLO 4.2 Students will be able to integrate research findings into a concise original written report that either analyzes collected data and obtained results or reviews and reflects on published scientific work.

PLO 4.3 Students will be able to identify an audience and construct a message tailored to that audience and act as a science ambassador by conveying the importance of the research or topic of study.

PLO 4.4 Students will be able to prepare professional documents, such as résumés and cover letters, that accurately represent the students' skills and knowledge for graduate/professional school or potential future employers.

Chicana and Chicano Studies, BA

PLO 1 Identify and explain the significance of historical, social, political and cultural events in shaping the Chicana experience in the U.S. (Overview)

PLO 2 Identify and use social theories to analyze historical and contemporary contexts in the U.S. Chicana experience including analysis of the intersections of identity with gender, class, race/ethnicity, sexuality, nation, ability and citizenship status. (Theory)

PLO 3 Describe and explain the significance of global migration and immigration in Chicana histories and within contemporary communities. (Global)

PLO 4 Effectively use oral, written, and creative communication to demonstrate critical thinking, research, and advocacy. (Skills)

Child and Adolescent Development, BA (including a Preparation for Teaching Program)

PLO 1 Demonstrate holistic knowledge of child and adolescent development that integrates physical, cognitive, social, and emotional domains.

PLO 2 Describe how contextual factors, including family, community, policy, and culture, influence development across diverse populations.

PLO 3 Apply developmental theory and research to address the individual and collective needs of children, youth, and families.

PLO 4 Demonstrate understanding of effective advocacy to ensure equity and respect for children, families, and the broader community.

Chinese, BA

PLO 1 Demonstrate intermediate mid to high (ACTFL) skills in listening, speaking, reading, and writing

PLO 2 Use the language to investigate, explain, and reflect on products, practices, and perspectives of the cultures studied

PLO 3 Analyze and compare critically a wide variety of literary texts to demonstrate knowledge of major genres, authors, critical theory, and literary movements as they relate to cultural and artistic movements

PLO 4 Identify and describe linguistic patterns of the target language

PLO 5 Demonstrate introductory translation skills of a variety of texts

PLO 6 Develop and carry out research projects, including term papers and bibliographic research, in accordance with a major style guideline

Civil Engineering, BS

PLO 1 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

PLO 2 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

PLO 3 Communicate effectively with a range of audiences.

PLO 4 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions

PLO 7 Acquire and apply new knowledge as needed, using appropriate learning strategies.

Climate Science, BS

PLO 1 Explain current climate in terms of basic physical and dynamic processes.

PLO 2 Explain the mechanisms responsible for climate change.

PLO 3 Know and be able to practice the techniques used for collecting, analyzing, and interpreting various forms of climate data.

PLO 4 Demonstrate an ability to synthesize concepts from a broad range of disciplines, and apply them to problems in climate science.

PLO 5 Explain ideas and results through written, statistical, graphical, oral and computer-based forms of communication

Communication Studies, BA

PLO 1 Core: Students will examine the historical formation of the communication studies discipline and how it shapes communication as a central problematic in contemporary life.

PLO 2 Core: Students will design their future as communication leaders in contemporary society.

PLO 3 Foundation: Students will explain a set of assumptions and concepts that distinguish an area of communication study.

PLO 4 Inquiry: Students will distinguish the types of questions, problems, or phenomena that a research approach addresses from those it does not.

PLO 5 Practice: Students will apply a set of communication-related concepts to a problem or phenomenon in a significant relational, sociopolitical, or cultural context.

Communicative Disorders and Sciences, BS

PLO 1 Explain basic human mechanisms and processes including anatomy, physiology, and neurobiology of speech, language, hearing, and swallowing.

PLO 2 Distinguish between characteristics of human communication differences and disorders across the lifespan.

PLO 3 Describe common clinical approaches, evidence-based practices and interprofessional collaboration in speech-language pathology and audiology.

PLO 4 Articulate essential elements of equitable and inclusive educational and healthcare services.

PLO 5 Apply knowledge, skills, and dispositions to ethical and culturally responsive practice with diverse populations.

Computer Engineering, BS

PLO 1 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

PLO 2 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

PLO 3 Communicate effectively with a range of audiences.

PLO 4 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

PLO 7 Acquire and apply new knowledge as needed, using appropriate learning strategies.

Computer Science, BS

PLO 1 Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.

PLO 2 Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

PLO 3 Communicate effectively in a variety of professional contexts.

PLO 4 Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.

PLO 5 Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

PLO 6 Apply computer science theory and software development fundamentals to produce computing-based solutions.

Computer Science and Linguistics, BS

PLO 1 Apply the fundamental understanding and knowledge of diverse forms of languages and linguistic phenomena for computational analysis.

PLO 2 Design, implement, and evaluate theoretical models of linguistic phenomena as well as practical applications that involve computer processing of human language.

PLO 3 Communicate effectively in a variety of professional contexts.

PLO 4 Recognize professional responsibilities and make informed judgments in computer science and linguistics

practice based on legal and ethical principles.

PLO 5 Play an effective role as a team member or a leader engaged in activities appropriate to the program's discipline.

PLO 6 Apply theory, computer science fundamentals, and tools throughout the applied linguistics process and employ the resulting knowledge and skills to produce computer science and linguistics solutions.

Creative Arts, BA

PLO 1 Perform interdisciplinary analysis of various forms of creative arts, attending to connections and commonalities as well as differences, in both written and oral formats.

PLO 2 Identify and articulate various and sometimes contested functions and purposes of the creative arts.

PLO 3 Demonstrate the ability to develop and use practice-based and digital humanities methodologies in research projects.

PLO 4 Identify, select, use and cite information sources appropriately.

PLO 5 Create class projects that demonstrate innovative thinking.

PLO 6 Collaborate effectively with other students in the completion of team projects.

D

Dance, BA

PLO 1 Identify and work conceptually with the elements of dance.

PLO 2 Understand the choreographic processes, aesthetic properties of style, and the ways these shape are shaped by artistic and cultural ideas and contexts.

PLO 3 An acquaintance with a wide selection of dance repertory, the principal eras, genres, and cultural sources.

PLO 4 Develop and defend critical evaluations.

PLO 5 Fundamental knowledge of the body and of kinesiology as applicable to work in dance.

PLO 6 Perform consistent with the goals and objectives of the specific liberal arts degree program being followed, and appropriate to the individuals' needs and interests.

PLO 7 An understanding of procedures for realizing a variety of dance styles.

PLO 8 Knowledge and/or skills in one or more areas of dance beyond basic course work and performance appropriate to the individuals' needs and interests, and consistent with the goals and objectives of the specific liberal arts degree program being followed.

Dance, BFA

PLO 1 Highest level of technical skill in at least one area of performance.

PLO 2 Achieve the highest possible level of conceptual understanding of the medium and its expressive possibilities.

PLO 3 Technical proficiency standards.

PLO 4 Have a fundamental knowledge of the body and kinesiology.

PLO 5 Develop basic knowledge and skills in dance pedagogy.

PLO 6 Develop basic knowledge and skills in choreography and have opportunities to develop their choreographic potential in studies that include traditional and/or experimental approaches.

PLO 7 Demonstrate their competence by developing a body of work for evaluation in the major area of study.

PLO 8 Be able to place dance in historical, cultural, and stylistic contexts.

PLO 9 Develop an understanding of the common elements and vocabulary and the interaction of these elements and to be able to employ this knowledge in analysis of dance.

PLO 10 Form and defend analysis and critiques of dance and communicate dance ideas, concepts, and requirements to professionals and laypersons related to practice of the major field.

PLO 11 Learn to analyze dance perceptively and to evaluate.

PLO 12 Form and defend individual critiques.

Data Science, BS

PLO 1 Analyze a complex problem involving large datasets and apply principles of computing and other relevant disciplines to identify solutions.

PLO 2 Design, implement, and evaluate a computing-based solution to meet a given set of requirements for processing and analyzing large data sets.

PLO 3 Communicate effectively in a variety of professional contexts.

PLO 4 Recognize professional responsibilities and make informed judgments in data science practice based on legal and ethical principles.

PLO 5 Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.

PLO 6 Apply theory, software development fundamentals, and tools throughout the data lifecycle and employ the resulting knowledge and skills to produce data-driven solutions.

Design Studies, BA

PLO 1 Utilize knowledge gained in the classroom to develop discipline-based skills in materials and techniques.

PLO 2 Demonstrate professional depth of knowledge within their field of study.

PLO 3 Engage in global views and weigh design decisions within the parameters of ecological, socio-economic, and cultural contexts.

PLO 4 Demonstrate all aspects of the design process to identify complex problems and generate solutions that optimize human experiences.

PLO 5 Engage in multi-disciplinary collaborative work team structures.

PLO 6 Demonstrate discipline-based design ideas verbally, visually and digitally.

E

Earth System Science, BS

PLO 1 Explain interactions between geosphere, hydrosphere, biosphere, atmosphere (Earth Systems) temporally and spatially.

PLO 2 Use scientific principles and methodology including quantitative and critical thinking skills to address complex Earth System issues and problems.

PLO 3 Investigate human interactions and perspectives of complex Earth Systems problems.

PLO 4 Communicate scientific perspectives on ESS issues.

Biological Sciences - Ecology and Evolution, BS

PLO 1 Hypotheses and Experiments Students will demonstrate the ability to formulate hypotheses and design experiments to address a scientific question.

PLO 2 Biology Content Students will demonstrate an understanding of the relevant content in their concentration.

PLO 3 Laboratory or Field Skills Students will demonstrate laboratory or field skills relevant to their concentration.

PLO 4 Scientific Writing Skills Students will demonstrate proficiency in scientific writing skills by effectively writing an advanced scientific paper.

PLO 5 Oral Presentations Students will demonstrate proficiency in oral presentation skills by effectively presenting scientific research.

Economics, BA

PLO 1 Students will be able to use microeconomic theory to understand and explain the determinants of prices, optimal behavior in strategic situations, and welfare effects in markets, and to critique real-world policy.

PLO 2 Students will be able to use macroeconomic theory to understand and explain economic growth, business cycles, and monetary policy, as well as to critique real-world macroeconomic policy.

PLO 3 Describe an economic study that illustrates one of the following methods of economic inquiry: Applied Econometrics, Experimental Economics, or Other (Analytical Narrative, Cost-Benefit Analysis, Simulation, etc.).

PLO 4 List the subfields of economics and explain the JEL system, describe the contours of economics as a scholarly

discipline, and describe in detail one of the two subfields: Economic History / Economic Thought or Econometrics.

PLO 5 Generate and apply new knowledge to an economics problem, using theory and methods of economic inquiry, and communicate the results through academic writing, speaking, and presentation.

Economics, BS

PLO 1 Students will be able to use microeconomic theory to understand and explain the determinants of prices, optimal behavior in strategic situations, and welfare effects in markets, and to critique real-world policy.

PLO 2 Students will be able to use macroeconomic theory to understand and explain economic growth, business cycles, and monetary policy, as well as to critique real-world macroeconomic policy.

PLO 3 Describe an economic study that illustrates one of the following methods of economic inquiry: Applied Econometrics, Experimental Economics, or Other (Analytical Narrative, Cost-Benefit Analysis, Simulation, etc.).

PLO 4 List the subfields of economics and explain the JEL system, describe the contours of economics as a scholarly discipline, and describe in detail one of the two subfields: Economic History / Economic Thought or Econometrics.

PLO 5 Generate and apply new knowledge to an economics problem, using theory and methods of economic inquiry, and communicate the results through academic writing, speaking, and presentation.

Electrical Engineering, BS

PLO 1 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

PLO 2 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

PLO 3 Communicate effectively with a range of audiences.

PLO 4 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

PLO 7 Acquire and apply new knowledge as needed, using appropriate learning strategies.

Engineering Technology, Computer Network System Management (CNSM) Concentration, BS

PLO 1 Demonstrate strong communication, critical thinking, and interpersonal skills;

PLO 2 Use skills in team development, dynamics, and management to work as team players;

PLO 3 Demonstrate ethical behavior and concern for colleagues, society, and the environment;

PLO 4 Demonstrate leadership skills for a technology professional;

PLO 5 Implement and manage computer and network systems;

PLO 6 Solve problems related to daily interruptions of information flow;

PLO 7 Design and interface components for connected products;

PLO 8 Manage databases and cloud computing systems and services;

PLO 9 Implement and manage Internet of Things (IoT) systems;

PLO 10 Apply cybersecurity techniques to protect networks from attacks.

Engineering Technology, Manufacturing Systems Concentration, BS

PLO 1 Demonstrate strong communication, critical thinking, and interpersonal skills;

PLO 2 Use skills in team development, dynamics, and management to work as team players;

PLO 3 Demonstrate ethical behavior and concern for colleagues, society, and the environment;

PLO 4 Demonstrate leadership skills for a technology professional;

PLO 5 Apply science and math principles to solve technical problems in manufacturing.

PLO 6 Integrate principles of design, materials selection, and manufacturing processes into product development;

PLO 7 Implement automation, advanced and smart manufacturing including robotics, 3D printing and IIoT to improve manufacturing operations and processes;

PLO 8 Apply lean principles and quality assurance to product development, management and decision making in manufacturing enterprises; and,

PLO 9 Demonstrate cross-functional skills to address professional practices, as well as global and societal issues relevant to manufacturing.

English, BA (Concentrations in General English, Creative Writing, Preparation for Teaching (Single Subject), and Professional and Technical Writing)

PLO 1 Read closely in a variety of forms, styles, structures, and modes, and articulate the value of close reading in the study of literature, creative writing, or rhetoric.

PLO 2 Show familiarity with major literary works, genres, periods, and critical approaches to British, American, and World Literature.

PLO 3 Write clearly, effectively, and creatively, and adjust writing style appropriately to the content, the context, and nature of the subject.

PLO 4 Develop and carry out research projects, and locate, evaluate, organize, and incorporate information effectively.

PLO 5 Articulate the relations among culture, history, and texts, including structures of power.

Environmental Studies, BA (including a Preparation for Teaching Program)

PLO 1 Write a logical analytical paper using good writing style and construction supported by appropriate research.

PLO 2 Determine, apply and interpret appropriate basic statistical or other quantitative analyses to environmental data.

PLO 3 Develop proficiency in the interdisciplinary sustainability principles that are the foundations of environmental studies; they will know the key environmental challenges facing the planet, know relevant interdisciplinary information about these challenges, and be able to develop/identify feasible solutions.

PLO 4 Productively conduct group/team work to deliver professional quality presentations and reports and also engage in community service and democratic participation.

PLO 5 Demonstrate in-depth knowledge and skills in a non-science field.

Environmental Studies, BS

PLO 1 Write a logical analytical paper using good writing style and construction supported by appropriate research.

PLO 2 Determine, apply and interpret appropriate basic statistical or other quantitative analyses to environmental data.

PLO 3 Develop proficiency in the interdisciplinary sustainability principles that are the foundations of environmental studies; they will know the key environmental challenges facing the planet, know relevant interdisciplinary information about these challenges, and be able to develop/identify feasible solutions.

PLO 4 Productively conduct group/team work to deliver professional quality presentations and reports and also engage in community service and democratic participation.

PLO 5 Demonstrate in-depth knowledge and skills in a science or technical field.

F

Forensic Science, BS (Concentrations in Biology, Chemistry, and Digital Evidence)

PLO 1 Apply the scientific method to draw logical conclusions about crime scenes.

PLO 2 Demonstrate competence in the recognition, documentation, collection, and analysis of forensic evidence.

PLO 3 Identify sources and causes of error in forensic science.

PLO 4 Interpret evidence and communicate findings clearly in both written reports and oral testimony.

PLO 5 Contextualize forensic science within the fields of criminal justice, human rights, and physical and mental health.

French, BA (Including a Preparation for Teaching Program)

PLO 1 Demonstrate intermediate mid to high (ACTFL) skills in listening, speaking, reading, and writing.

PLO 2 Use the language to investigate, explain, and reflect on products, practices, and perspectives of the cultures studied.

PLO 3 Analyze and compare critically a wide variety of literary texts to demonstrate knowledge of major genres, authors, critical theory, and literary movements as they relate to cultural and artistic movements.

PLO 4 Identify and describe linguistic patterns of the target language.

PLO 5 Demonstrate introductory translation skills of a variety of texts.

PLO 6 Develop and carry out research projects, including term papers and bibliographic research, in accordance with a major style guideline.

G

Interdisciplinary Engineering, BS

PLO 1 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

PLO 2 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

PLO 3 Communicate effectively with a range of audiences.

PLO 4 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

PLO 7 Acquire and apply new knowledge as needed, using appropriate learning strategies.

Geography, BA

PLO 1 Apply social and ethical responsibilities to foster inclusion and sustainability;

PLO 2 Evaluate, critique, and communicate geographic information within relevant scholarship and in relation to other disciplines;

PLO 3 Demonstrate mastery in physical, regional, and human geography while examining the interrelationships between subdisciplines;

PLO 4 Create, investigate and collaborate on productive spatial research activities from inquiry to impact;

PLO 5 Apply appropriate geographic theories, methods, and geospatial technologies to address problems from local to global scales.

Geographic Information Science (GIS), BS

PLO 1 Examine social and ethical issues with GIS to foster learning about inclusion and sustainability;

PLO 2 Analyze, critique, and communicate geospatial data and scholarship in relation to other scientific disciplines;

PLO 3 Demonstrate mastery of geographic information science literature, data, methods, and visualization tools and techniques;

PLO 4 Create, investigate, and collaborate on productive spatial research activities from inquiry to impact;

PLO 5 Apply geographic information science theories, methods, and technologies to address problems from local to global scales.

Geology, BS

PLO 1 Develop the skill to read and accurately interpret topographic and geologic maps.

PLO 2 Effectively communicate scientific ideas and results in writing.

PLO 3 Use the fundamentals of chemistry, physics, and math to solve geologic problems.

PLO 4 Classify and identify geological materials such as minerals, rocks, and fossils, and understand their

relationships to each other and interacting earth systems.

PLO 5 Visualize and comprehend geologic structures and processes.

PLO 6 Understand how geologists measure deep time and reconstruct earth history.

Global Studies, BA

PLO 1 Engage in interdisciplinary studies and demonstrate an understanding of complex global events and processes of globalization in relationship to culture, politics, gender studies, sustainability, and foreign language.

PLO 2 Demonstrate the ability to write, speak, research, and critically analyze complex global events and processes of globalization.

PLO 3 Analyze, synthesize, and interpret texts, images, and experiences, demonstrating quantitative literacy, innovation of thought and creation of theoretical or practical solutions to global problems.

PLO 4 Demonstrate a critical understanding of the ethical implications of global citizenship, informed by global awareness and cross-cultural understanding.

Graphic Design, BFA

PLO 1 Apply the principles of color, composition, hierarchy, typography as they relate in the various media-digital, print, motion, 3-D, etc.-that exist in design.

PLO 2 Demonstrate the ability to create and develop original concepts, build prototypes, integrate feedback and carry projects through to the production process.

PLO 3 Apply principles of visual communication as they relate to reaching audiences, the role of design in society, and the ability to work cooperatively.

PLO 4 Identify key aspects of graphic design history, theory and criticism from a variety of perspectives, including prominent designers, historians and contemporary writers and thought-leaders.

PLO 5 Show fluency in the breadth of disciplines that graphic design encompasses, with deep exploration into information architecture, user interface design, interactive design, motion graphics, iterative image-making, exhibition design and typeface design.

PLO 6 Demonstrate understanding of the design process, design thinking and professional standards and practices, including real-project learning scenarios and a transition into preparing a portfolio to enter the working force.

H

History, BA

PLO 1 Describe and explain how peoples and societies evolved across time and space demonstrating the importance of context (social, political, economic, cultural, environmental, ideological, and technological).

PLO 2 Illustrate the complexity of historical causality and describe past events from multiple perspectives.

PLO 3 Analyze the credibility of historical sources and arguments, revising interpretations as new evidence warrants.

PLO 4 Conceive and carry out historical research, constructing persuasive evidence-based arguments using primary and secondary sources according to recognized standards of the historical discipline.

Humanities, American Studies Concentration, BA

PLO 1 Demonstrate the ability to frame questions and pursue answers to aesthetic, social, cultural and global problems using interdisciplinary methods.

PLO 2 Demonstrate the ability to describe and compare the roles, impacts and ethical implications of ideas, texts, social movements, contemporary situations, and creations of the human imagination.

PLO 3 Demonstrate skill in written and verbal communication, including argumentation.

PLO 4 Demonstrate the ability to identify, select, use, and cite information sources appropriately.

PLO 5 Explain how current events and contemporary issues are understood with knowledge of the historical and cultural background of a particular world area (e.g., America, East Asia, Europe, or the Middle East), including processes of cultural formation, historical development, and social change.

Humanities, Liberal Arts Concentration, BA

PLO 1 Demonstrate the ability to frame questions and pursue answers to aesthetic, social, cultural and global problems using interdisciplinary methods.

PLO 2 Demonstrate the ability to describe and compare the roles, impacts and ethical implications of ideas, texts, social movements, contemporary situations, and creations of the human imagination.

PLO 3 Demonstrate skill in written and verbal communication, including argumentation.

PLO 4 Demonstrate the ability to identify, select, use, and cite information sources appropriately.

Humanities, Religious Studies Concentration, BA

PLO 1 Demonstrate the ability to frame questions and pursue answers to aesthetic, social, cultural and global problems using interdisciplinary methods.

PLO 2 Demonstrate the ability to describe and compare the roles, impacts and ethical implications of ideas, texts, social movements, contemporary situations, and creations of the human imagination.

PLO 3 Demonstrate skill in written and verbal communication, including argumentation.

PLO 4 Demonstrate the ability to identify, select, use, and cite information sources appropriately.

PLO 5 Demonstrate a high level of religious literacy, including the ability to articulate etic and emic perspectives for specific religions, and a functional understanding of at least five major world religious systems (e.g. Judaism, Christianity, Islam, Hinduism, Buddhism, Confucianism, Taoism, Sikhism, Jainism, a specific geographic set of indigenous religions [African, Australian, North American, South American, Pacific Islander, North Asian, pre-Christian European], Wicca, Afro-Caribbean religions).

PLO 6 Function adroitly within the interdisciplinary nature of comparative religious studies. Describe how religion, as a phenomenon, can be analyzed historically, philosophically, psychologically, sociologically, geographically, and artistically, as well as theologically. Demonstrate ability to write and speak about religions in a scholarly, civil, and respectful manner, using the academic discourses that have evolved for this purpose. Foster civil discourse about religion by encountering and engaging community members, faculty, and students who hold diverse views within and about religious traditions.

I

Industrial and Systems Engineering, BS

PLO 1 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

PLO 2 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

PLO 3 Communicate effectively with a range of audiences.

PLO 4 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

PLO 7 Acquire and apply new knowledge as needed, using appropriate learning strategies.

Industrial Design, BS

PLO 1 Demonstrate a functional knowledge of design aesthetics to create appropriate 2D and 3D artifacts, as well as have the ability to think visually and develop design concepts utilizing rapid 2D and 3D visualization tools and techniques.

PLO 2 Articulate a functional understanding of manufactured products, including being able to explain how products work, what constitutes their structural integrity, and what materials and manufacturing processes are required to produce them.

PLO 3 Apply their knowledge of end-user psychology, ergonomics, anthropometry, and user interaction to the design of manufactured products.

PLO 4 Investigate, analyze, synthesize, and make design decisions based on an ecological understanding of the impact of a design, including the reconciliation of priorities and concerns of end users with those of business, society, and the environment.

PLO 5 Employ a design process that generates products that are useful, usable, and desirable to specific segments of the human population, including an understanding of how designers define problems, researching contextual issues, determining design requirements, and conceptualizing and evaluating alternatives to test and refine solutions.

Information Science and Data Analytics, BS (SJSU Online)

PLO 1 Apply information science and data analytics concepts and methods by thinking critically and creatively to conceptualize and solve real-world problems.

PLO 2 Demonstrate an understanding of the data lifecycle, including data curation and stewardship, distributed computing, and the data pipeline ecosystem.

PLO 3 Demonstrate an understanding of professional and ethical responsibility in data ownership security, sensitivity of data, and consequences and privacy concerns of data analysis.

PLO 4 Demonstrate an ability to identify user-centric information and data needs of diverse populations and to interpret data findings effectively to diverse audiences, orally, visually, and in written formats.

PLO 5 Demonstrate an understanding of how people from diverse backgrounds and cultures interact with technology and with each other in technological contexts; and how to plan strategically for emerging technologies and the changing technological landscape.

Interdisciplinary Studies, Educational and Community Leadership Concentration, BA (SJSU Online)

PLO 1 Create interdisciplinary strategies to manage challenges within one's professional field.

PLO 2 Show leadership skills (planning, coordination, technology, and managing) that promote change for the betterment of all individuals within a community system.

PLO 3 Use an assets-based approach when supporting child, youth, adult, and community learning/treatment/change.

PLO 4 Advocate an anti-racist approach to establish social justice with diverse communities.

PLO 5 Communicate ethically and responsibly in oral and written form across settings, purposes, and audiences.

PLO 6 Analyze an issue or problem, integrating at least two disciplinary perspectives.

Interdisciplinary Studies, Health Care Leadership Concentration, BS (SJSU Online)

PLO 1 Demonstrate critical thinking and problem-solving skills in health care leadership contexts.

PLO 2 Apply ethical principles and decision-making frameworks to healthcare leadership situations.

PLO 3 Demonstrate effective oral and written communication skills for diverse healthcare contexts.

PLO 4 Evaluate healthcare systems and policies to improve patient care and organizational outcomes.

Interior Design, BFA

PLO 1 Understand concepts, principles, and theories of sustainability as they pertain to building methods, materials, systems, and occupants within the parameters of ecological, socio-economic, and cultural contexts.

PLO 2 Express ideas clearly through visual media (ideation drawings and sketches), the production of presentation drawings across a range of appropriate media, and to produce integrated contract documents including drawings, schedules, and specifications appropriate to project size and scope.

PLO 3 Understand and apply laws, codes, standards, accessibility guidelines and industry-specific regulations that impact the design of interior spaces.

PLO 4 Be informed by knowledge of human factors and theories of human behavior related to the built environment, including an understanding of the diverse social and behavioral norms that affect design decisions.

PLO 5 Apply theories of human behavior in the built environment by selecting, interpreting, and applying appropriate anthropometric data when designing a space.

PLO 6 Be able to work in a multi-disciplinary collaborative environment to identify and explore complex problems and generate creative solutions that optimize the human experience within the interior environment.

J

Japanese, BA

PLO 1 Demonstrate intermediate mid to high (ACTFL) skills in listening, speaking, reading, and writing.

PLO 2 Use the language to investigate, explain, and reflect on products, practices, and perspectives of the cultures studied.

PLO 3 Analyze and compare critically a wide variety of literary texts to demonstrate knowledge of major genres, authors, critical theory, and literary movements as they relate to cultural and artistic movements.

PLO 4 Identify and describe linguistic patterns of the target language.

PLO 5 Demonstrate introductory translation skills of a variety of texts.

PLO 6 Develop and carry out research projects, including term papers and bibliographic research, in accordance with a major style guideline.

Journalism, BS

PLO 1 Demonstrate knowledge of the diversity of groups in a global society in relationship to communications.

PLO 2 Demonstrate the ability to think critically, creatively and independently.

PLO 3 Write correctly and clearly in forms and styles appropriate for the communications professions, audiences, and purposes they serve.

PLO 4 Demonstrate the ability to use tools and technologies appropriate for the communications professions in which they work.

Justice Studies, BS (Concentrations in General Justice Studies and Criminology)

PLO 1 Explain the major concepts, theories, and historical trends within studies of crime, law, and social justice at all levels, from local to global.

PLO 2 Describe and apply ways to gather valid information and conduct research to answer questions about crime, law, and social justice issues.

PLO 3 Understand and critically analyze individual, institutional, and societal responses to crime, law, and social justice issues.

PLO 4 Employ interdisciplinary perspectives on systems of inequality and concepts of justice to propose grounded, informed, and sustainable solutions to social problems in communities and/or institutions.

PLO 5 Articulate compelling, reasoned, and empirically-informed positions on issues of justice to diverse audiences. Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

K

Kinesiology, BS (Including a Preparation for Teaching Program)

PLO 1 Explain, identify, and/or demonstrate the theoretical and/or scientific principles that can be used to address issues or problems in the sub-disciplines in kinesiology.

PLO 2 Effectively communicate in writing (clear, concise and coherent) on topics in kinesiology.

PLO 3 Effectively communicate through an oral presentation (clear, concise and coherent) on topics in kinesiology.

PLO 4 Utilize their experiences across a variety of health-related and skill-based activities to inform their scholarship and practice in the sub disciplines in kinesiology.

PLO 5 Identify and analyze social justice and equity issues related to kinesiology for diverse populations.

L

Liberal Studies, BA (Including Integrated Teacher Education, Integrated Teacher Education - Spanish Bilingual, and Preparation for Teaching Programs)

PLO 1 Demonstrate the ability to frame questions and pursue answers to aesthetic, social, cultural and global problems using interdisciplinary methods.

PLO 2 Demonstrate the ability to describe and compare the roles, impacts and ethical implications of ideas, texts, social movements, contemporary situations, and creations of the human imagination.

PLO 3 Demonstrate skill in written and verbal communication, including argumentation.

PLO 4 Demonstrate the ability to identify, select, use and cite information sources appropriately.

PLO 5 Demonstrate foundational knowledge in subjects taught in K-8 schools.

PLO 6 Demonstrate understanding of how to engage and support learning for all K-8 students by creating lesson plans that use a variety of instructional strategies, resources and technologies to meet students' diverse learning needs.

PLO 7 Demonstrate understanding of how to create and maintain effective learning environments through reflection and through the development of lesson that promote student learning, reflect diversity and encourage constructive interactions among students.

PLO 8 Demonstrate understanding of how to plan instruction and assess student learning by creating lesson plans that use formative and summative assessment data to plan, differentiate and modify instruction.

Linguistics, BA

PLO 1A Transcribe, using the International Phonetic Alphabet, and produce speech sounds of the world's languages. Apply concepts of acoustic theory in analyses of speech data.

PLO 1B Analyze linguistic sound patterns in terms of their function, their structure, and the pressures that influence their change over time.

PLO 1C Analyze words and their internal structure in terms of their meanings, their sound properties, and the pressures that influence their change over time.

PLO 1D Analyze sentence structure in any language in terms of grammatical relations and constituent structure, and recognize the typological diversity of syntactic phenomena.

PLO 1E Analyze the meaning of words and sentences, elaborate on the role of linguistic and pragmatic context in the interpretation of meaning, and understand the role of theories in the analysis of semantic data.

PLO 1F Identify phonological, morphological, syntactic and semantic changes in the history of a language, discuss the contribution of social factors to language variation and change, explain the genetic and typological classification of languages, and use the comparative method to reconstruct ancestors of related languages.

PLO 2A Analyze phonetic, phonological, morphological, syntactic, semantic, and historical linguistics data.

PLO 2B Critically evaluate competing approaches to the analysis of linguistic data.

PLO 2C Use library and electronic research sources effectively.

PLO 2D Use reading and writing skills effectively.

PLO 2E Demonstrate proficiency equivalent to one-year college level study in a language other than their native language.

PLO 3A Discuss issues in speech synthesis, speech recognition, natural language processing, and develop speech recognition, speech synthesis and natural language processing programs.

PLO 3B Evaluate theories of first and second language acquisition, and second language teaching.

PLO 3C Identify language-related social programs in areas such as education, the law, the workplace, etc., and discuss the feasibility of various empirically-based solutions.

M

Biological Sciences - Marine Biology, BS

- PLO 1** Hypotheses and Experiments Students will demonstrate the ability to formulate hypotheses and design experiments to address a scientific question.
- PLO 2** Biology Content Students will demonstrate an understanding of the relevant content in their concentration.
- PLO 3** Laboratory or Field Skills Students will demonstrate laboratory or field skills relevant to their concentration.
- PLO 4** Scientific Writing Skills Students will demonstrate proficiency in scientific writing skills by effectively writing an advanced scientific paper.
- PLO 5** Oral Presentations Students will demonstrate proficiency in oral presentation skills by effectively presenting scientific research.

Materials Engineering, BS

- PLO 1** Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- PLO 2** Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- PLO 3** Communicate effectively with a range of audiences.
- PLO 4** Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- PLO 5** Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- PLO 6** Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- PLO 7** Acquire and apply new knowledge as needed, using appropriate learning strategies.

Mathematics, BA (Including a Preparation for Teaching Program)

- PLO 1** Demonstrate the ability to prove mathematical statements in abstract algebra using definitions, theorems, and logical arguments.
- PLO 2** Prove mathematical statements in real analysis using definitions, theorems, and logical arguments.
- PLO 3** Demonstrate depth of understanding of undergraduate mathematics by solving problems in advanced courses using concepts from prerequisite courses.

Mechanical Engineering, BS

- PLO 1** Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- PLO 2** Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- PLO 3** Communicate effectively with a range of audiences.
- PLO 4** Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- PLO 5** Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- PLO 6** Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
- PLO 7** Acquire and apply new knowledge as needed, using appropriate learning strategies.

Meteorology, BS

- PLO 1** Read and interpret various meteorological diagrams, and develop and present a short-to-medium-term forecast with considerable skill.
- PLO 2** Explain meteorological phenomena at various scales in terms of basic physical and dynamic processes, including radiative forcing, thermodynamics, microphysics, and dynamics.
- PLO 3** Know the design and use of meteorological instruments, and techniques for collecting and interpreting the data.

PLO 4 Explain current climate in terms of basic physical and dynamical processes, and explain the mechanisms responsible for climate change.

PLO 5 Explain ideas and results through written, statistical, graphical, oral and computer-based forms of communication.

Music, BA

PLO 1 Hear, identify, and work conceptually with the melodic, harmonic, and rhythmic elements of music, including sight-reading, keyboard proficiency, and analysis.

PLO 2 Identify, discuss, and write about the history, traditions, practices, and cultures of the Western art-music tradition, along with related materials of non-Western music's.

PLO 3 Competently perform repertory appropriate to a university music program, utilizing skills and knowledge gained from the previous two learning outcomes.

PLO 4 Work proficiently with basic music technology, its applications, and its use in their area of specialization.

PLO 5 Successfully complete a capstone experience appropriate to their area of specialization.

Music, BM (Concentrations in Composition, Jazz Studies, Music Education, and Performance)

PLO 1 Hear, identify, and work conceptually with the melodic, harmonic, and rhythmic elements of music, including sight-reading, keyboard proficiency, and analysis.

PLO 2 Identify, discuss, and write about the history, traditions, practices, and cultures of the Western art-music tradition, along with related materials of non-Western music's.

PLO 3 Competently perform repertory appropriate to a university music program, utilizing skills and knowledge gained from the previous two learning outcomes.

PLO 4 Work proficiently with basic music technology, its applications, and its use in their area of specialization.

PLO 5 Successfully complete a capstone experience appropriate to their area of specialization.

PLO 6 Perform standard repertoire competently and expressively, and provide musical leadership appropriate to a university music program as soloists, as conductors, and as members of major performing ensembles and smaller chamber ensembles.

PLO 7 Identify and discuss the repertory in their major performance area; perform from a cross-section of that repertory through a successful capstone experience (a senior solo recital or senior recital of original compositions).

PLO 8 (*For Music Education Concentration only*) Demonstrate basic performance skills as well as pedagogical and classroom methods appropriate for a music education major entering the field of public-school teaching.

N

Nursing, BS (Nursing, RN to BSN Concentration, BSN, and Nursing, Concurrent Enrollment Program (CEP) ADN to BSN)

PLO 1 Conduct comprehensive focused assessments of biological and social determinants of health and illness in clients, using culturally appropriate approaches.

PLO 2 Use the nursing process to provide holistic client-centered care that demonstrates the safe application of the pathophysiological, medical, and nursing management of common acute and chronic illnesses, and health promotion

PLO 3 Deliver client-centered education that integrates the application of developmental stages across the lifespan, cultural background, educational level, and health literacy considerations.

PLO 4 Act as an advocate to develop collaborative, evidence-based strategies for interprofessional, client-centered care.

PLO 5 Demonstrates accountability for safe administration and evaluation of pharmacologic agents and complementary modalities used in health promotion as well as acute and chronic illnesses.

PLO 6 Use relevant technology and informatics to support nursing care that contributes to safe and high-quality client outcomes.

PLO 7 Communicate effectively with clients and members of the interprofessional healthcare team to improve client outcomes.

PLO 8 Demonstrate beginning levels of clinical judgment, systems thinking, and accountability for client outcomes

when delegating to and supervising other members of the healthcare team.

PLO 9 Assumes responsibility for and evaluates own professional nursing practice according to the ethical standards of the ANA Code for Nurses, standards of nursing practice, and legal mandates.

PLO 10 Coordinate healthcare for clients and populations across the lifespan to maximize health, independence, functional ability, and quality of life.

PLO 11 Analyze the influence of the social determinants of health, health care policy, financial drivers, and regulatory environments on nursing practice in the global community.

Nutritional Science, BS (Concentrations in Dietetics, Applied Nutrition and Food Sciences, and Food Management)

PLO 1 Obtain a critical understanding and the ability to apply theoretical and scientific knowledge from the subdisciplines in nutrition.

PLO 2 Effectively communicate the essential theories, scientific applications, and ethical considerations related to the discipline.

PLO 3 Identify global, social, environmental, and/or cultural issues related to the discipline for diverse populations.

P

Packaging, BS

PLO 1 Assess a package's functional properties;

PLO 2 Demonstrate knowledge of package material properties to meet particular physical needs;

PLO 3 Describe a package production system in order to present design and develop cost comparisons between various package configurations;

PLO 4 Assess a distribution channel to identify particular stresses incurred;

PLO 5 Design a package system (primary, secondary and tertiary) to contain, protect and transport products from manufacturer to consumer;

PLO 6 Develop reproducible test methodologies for evaluating particular properties in a package/material; and,

PLO 7 Organize and assemble presentations describing package systems, operations, designs, and cost comparisons.

Philosophy, BA

PLO 1 Demonstrate **intermediate levels** of written and oral communication in philosophical argument as addressed to audiences of both specialists and non-specialists in the field.

PLO 2 Demonstrate a **basic ability** to formulate a valid research question in a field of philosophical inquiry and address that research question in an article-length essay that includes evidence from both primary and secondary sources.

PLO 3 Demonstrate **intermediate knowledge** of core areas and methods of the global history of philosophy, including majors figures, ideas, and philosophical traditions.

PLO 4 Demonstrate **intermediate knowledge** of major ethical and aesthetic theories

PLO 5 Demonstrate a **basic ability** to offer philosophically rigorous argumentation on behalf of ethical and/or aesthetic choices.

PLO 6 Demonstrate an **intermediate understanding** of influential philosophical conceptions of the nature of reality, knowledge, language, and the human mind.

PLO 7 Demonstrate an **intermediate understanding** of influential philosophical conceptions of the nature of logic and reasoning *or* an ability to solve philosophical problems by using the tools of logical reasoning and formal languages.

PLO 8 Demonstrate an **intermediate understanding** of the ways in which culture, race, ethnicity, gender, economic class, sexual orientation, ability or disability, and national membership influence perceptions about the nature of value, practical reason, reality, knowledge, language, *or* the human mind.

Physics, BA

- PLO 1** Formulate specific research questions and design and/or interpret experiments that address these questions.
- PLO 2** Demonstrate an understanding of a breadth of physics concepts by solving physics problems related to these concepts.
- PLO 3** Demonstrate laboratory, modeling, computational and/or data analysis skills relevant to physics research.
- PLO 4** Communicate scientific content and thinking as evidenced by productive collaboration with peers, well-reasoned professionally formatted written papers and visual and oral presentations.
- PLO 5** Demonstrate an understanding of how work in physics influences technology, society and culture.

Physics, BS

- PLO 1** Formulate specific research questions and design and/or interpret experiments that address these questions.
- PLO 2** Demonstrate an understanding of a breadth of physics concepts by solving physics problems related to these concepts.
- PLO 3** Demonstrate laboratory, modeling, computational and/ or data analysis skills relevant to physics research.
- PLO 4** Communicate scientific content and thinking as evidenced by productive collaboration with peers, well-reasoned professionally formatted written papers and visual and oral presentations.
- PLO 5** Demonstrate an understanding of how work in physics influences technology, society and culture.

Physics, Preparation for Teaching, BA

- PLO 1** Know basic physics principles.
- PLO 2** Apply their knowledge to practical, theoretical and experimental problems.
- PLO 3** Be prepared for careers in science, industry and education.

Political Science, BA

- PLO 1** Breadth Students should possess a broad knowledge of the theory and methods of the various branches of the discipline.
- PLO 2** Application and Disciplinary Methods Students should be able to formulate research questions, engage in systematic literature searches using primary and secondary sources, evaluate research studies, and critically analyze and interpret influential political texts. Students should be able to apply these techniques to identify, understand, and analyze domestic and international political issues and organizations.
- PLO 3** Communication Skills Students should master basic competencies in oral and written communication skills and be able to apply these skills in the context of political science. This means communicating effectively about politics and/or public administration, public policy, and law.
- PLO 4** Citizenship Students should acquire an understanding of the role of the citizen in local, state, national, and global contexts and appreciate the importance of lifelong participation in political processes.

Psychology, BA

- PLO 1** Students will be able to demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.
- PLO 2** Students will be able to design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations.
- PLO 3** Students will be able to use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes.
- PLO 4** Students will be able to apply psychological principles to individual, interpersonal, group, and societal issues.
- PLO 5** Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

Psychology, BS (Discontinued, Eff F23)

- PLO 1** Students will be able to demonstrate familiarity with the major concepts, theoretical perspectives, empirical findings, and historical trends in psychology.
- PLO 2A** Students will be able to design, implement, and communicate basic research methods in psychology, including research design, data analysis, and interpretations.

- PLO 2B** Students will be able to design, implement, and communicate advanced research methods in two or more focused domains within psychology, including research design, data analysis, and interpretations within each domain.
- PLO 3** Students will be able to use critical and creative thinking, skeptical inquiry, and a scientific approach to address issues related to behavior and mental processes.
- PLO 4** Students will be able to apply psychological principles to individual, interpersonal, group, and societal issues.
- PLO 5** Students will value empirical evidence, tolerate ambiguity, act ethically, and recognize their role and responsibility as a member of society.

Public Health, BS (Concentrations in Community Health Education and Population Data Science)

- PLO 1 Social Justice** - Apply principles of social justice, through the lens of cultural humility, to achieve and sustain health equity.
- PLO 2 Factors of Health** - Explain the intersectionality of environmental, social, economic, behavioral, biological and political factors influencing human health and identify opportunities for change.
- PLO 3 Ethics** - Interpret and apply ethical principles to the practice of public health.
- PLO 4 Communication** - Demonstrate an ability to deliver public health messages in written, oral, and media-based formats to both public and professional audiences.
- PLO 5 Research** - Use public health methods and tools to collect and analyze population health data.
- PLO 6 Research** - Interpret the basic concepts of human health and disease and research grounded in the history, philosophy, and practice of public health.
- PLO 7 Policy** - Analyze the effects of multiple levels of policy and health systems on population and individual health outcomes and employ strategies to participate in the policy process.
- PLO 8 Community** - Use public health processes and practices, including working collaboratively with diverse individuals and communities, to create relevant interventions or investigations that engage and build community capacity, promote health, and reduce health inequities and disparities.

Public Relations, BS

- PLO 1** Demonstrate knowledge of the diversity of groups in a global society in relationship to communications.
- PLO 2** Demonstrate the ability to think critically, creatively and independently.
- PLO 3** Write correctly and clearly in forms and styles appropriate for the communications professions, audiences, and purposes they serve.
- PLO 4** Demonstrate the ability to use tools and technologies appropriate for the communications professions in which they work.

R

Radio-Television-Film, BA

- PLO 1** Become media literate: Know the history, processes and current structure of the electronic media, its ethical parameters, and the social and political effects of electronic and mass communication (radio, television, film, new media) on an audience.
- PLO 2** Tell meaningful stories through production of good narratives in radio, television, and film. Appreciate the art and aesthetics of media.
- PLO 3** Communicate information and entertainment to diverse cultures using radio, television and film. Be sensitive to the ways and processes of, and the attitudes held by races, religions, political and social groups that are not their own.
- PLO 4** Understand how to plan, produce, write and direct radio, television and film/cinema projects. Achieve professional-level skills of production. Select and operate video/television, film, and audio/radio technologies.
- PLO 5** Determine what type of information is needed for a research question, problem, or issue, and be able to retrieve, evaluate and effectively use such information to produce scholarship and production in radio, television, film and new media.

Recreation, BS (Concentrations in General Recreation, Recreation Management, and Recreation Therapy)

PLO 1 Demonstrate summative knowledge and skills across the core curriculum integrating the standards of the Recreation profession within the context of a rapidly changing world.

PLO 2 Plan, implement, and evaluate a recreation program or special events that are inclusive, culturally grounded and sensitive to diverse populations.

PLO 3 Demonstrate budgeting and financial skills in the framework of sustainability and ethical stewardship.

PLO 4 Demonstrate professional behavior and competencies in the framework of ethics, personal, and social responsibility.

PLO 5 Demonstrate proficient and professional written communication keeping in mind the global communities they will be working in.

S

Social Science, Preparation for Teaching (Single Subject), BA

PLO 1 The major will provide students with the opportunity to learn and apply content knowledge, discipline- specific analysis skills, and pedagogical methods and theories that underlie the K-12 social science curriculum.

PLO 2 The major will prepare prospective teachers to analyze complex discipline-based issues especially as they relate to the theory and practice of teaching social science. Students will learn to synthesize information from multiple sources and perspectives and communicate this knowledge effectively in a variety of oral and written formats.

PLO 3 The major will equip students with the necessary knowledge to use appropriate technologies especially as they relate to K-12 social science teaching.

PLO 4 The major will provide students with the essential understanding, knowledge and appreciation of diverse perspectives and contributions by and about diverse groups.

PLO 5 The major provides prospective teachers with planned, structured field experiences in classrooms; the field experiences are linked to coursework and give breadth of experience with diverse populations.

Social Work, BA

PLO 1 Demonstrate Ethical and Professional Behavior.

PLO 2 Engage Diversity and Difference in Practice.

PLO 3 Advance Human Rights and Social, Economic, and Environmental Justice.

PLO 4 Engage In Practice-informed Research and Research-informed Practice.

PLO 5 Engage in Policy Practice.

PLO 6 Engage with Individuals, Families, Groups, Organizations, and Communities.

PLO 7 Assess Individuals, Families, Groups, Organizations, and Communities.

PLO 8 Intervene with Individuals, Families, Groups, Organizations, and Communities.

PLO 9 Evaluate Practice with Individuals, Families, Groups, Organizations, and Communities.

Sociology, BA (Concentrations in General Sociology, Community Change, Race and Ethnic Studies, and Social Interaction)

PLO 1 Think sociologically about the relationship between social structure, interaction, identities, and inequalities.

PLO 2 Identify and explain major sociological theories and apply them to everyday life.

PLO 3 Be proficient in qualitative and quantitative research design, data collection and data analysis.

PLO 4 Be proficient in oral and written communication skills appropriate to the discipline.

PLO 5 Practice sociology as educated and civically engaged persons.

Software Engineering, BS

PLO 1 Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.

PLO 2 Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.

PLO 3 Communicate effectively with a range of audiences.

PLO 4 Recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.

PLO 5 Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.

PLO 6 Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.

PLO 7 Acquire and apply new knowledge as needed, using appropriate learning strategies.

Spanish, BA

PLO 1 Demonstrate intermediate mid to high (ACTFL) skills in listening, speaking, reading, and writing

PLO 2 Use the language to investigate, explain, and reflect on products, practices, and perspectives of the cultures studied

PLO 3 Analyze and compare critically a wide variety of literary texts to demonstrate knowledge of major genres, authors, critical theory, and literary movements as they relate to cultural and artistic movements

PLO 4 Identify and describe linguistic patterns of the target language

PLO 5 Demonstrate introductory translation skills of a variety of texts

PLO 6 Develop and carry out research projects, including term papers and bibliographic research, in accordance with a major style guideline

Statistics, BS

PLO 1 Perform standard mathematical computations with accuracy.

PLO 2 Apply statistical models to solve concrete problems and formulate meaningful conclusions.

PLO 3 Use technology to solve statistical problems.

Interdisciplinary Studies, BA

PLO 1 Analyze an issue or problem, integrating at least two disciplinary perspectives.

Interdisciplinary Studies, BS

PLO 1 Analyze an issue or problem, integrating at least two disciplinary perspectives.

T

Theatre Arts, BA

PLO 1 Demonstrate a literacy of language of stage and/or screen; know how to analyze a script, understand the historical and contemporary structure of a script, and the social and political effects of a performance on an audience.

PLO 2 Demonstrate an ability to tell meaningful stories through performance; correlate performance to production; Demonstrate acting skills and development of a character.

PLO 3 Communicate information and entertainment to diverse cultures using stage and/or screen; demonstrate sensitivity to the processes of and the attitudes held by races, religions, political and social groups that are not their own.

PLO 4 Demonstrate how to plan, perform, produce, write and direct for stage and screen; demonstrate professional-level skills of production; design for and operate contemporary technologies.

PLO 5 Demonstrate what type of information is needed for a research question, problem, or issue, and be able to retrieve, evaluate and effectively use such information to produce quality scholarship.

W

Women, Gender, and Sexuality Studies, BA

PLO 1 Identify and analyze the intersections of gender, sexuality, race, class, and nation social and institutional contexts.

PLO 2 Identify and describe major theories and political movements central to Women, Gender, and Sexuality Studies, placing contemporary developments in cultural, historical, environmental, and embodied contexts.

PLO 3 Describe the global span of feminist movements and the connection among gender and sexual minorities around the world.

PLO 4 Demonstrate critical thinking and research skills through written, oral and creative means.

Graduate Program Learning Outcomes

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z

Graduates will be able to satisfy the following program learning outcomes.

A

Accounting and Analytics, MS

PLO 1 Apply accounting, auditing, and tax principles within the context of a complex business environment.

PLO 2 Evaluate information technology and internal control processes and their role in financial and managerial reporting.

PLO 3 Demonstrate conceptual and analytical skills and their real world applications.

PLO 4 Develop effective oral and written communication skills in a context of conducting research.

PLO 5 Examine ethical implications of accounting practice.

Aerospace Engineering, MS

PLO 1 Model and Solve Problems - Use graduate level mathematics to model and solve aerospace engineering problems.

PLO 2 Analysis and Design - Apply aerospace engineering science (aerodynamics, propulsion, flight mechanics, stability & control, aerospace structures & materials, etc.) to perform an in-depth analysis and / or design of an aerospace engineering system taking into consideration economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints.

PLO 3 Computational and Experimental Tools - Use modern tools (computational or experimental).

PLO 4 Literature Review - Perform a literature search related to a given problem, cite the references in appropriate ways, and demonstrate an understanding of the cited literature.

PLO 5 Technical Writing - Graduate level technical writing ability, including correct language and terminology, appropriate visuals, and summarizing key ideas.

Applied Anthropology, MA

PLO 1 Understand a range of anthropological research methods and be able to conduct research relevant to problem solving in various settings and for different clients/partners.

PLO 2 Know basic models of applying anthropology in different settings and have the skills to be able to function as practitioners of several of them.

PLO 3 Be knowledgeable about (1) the discipline of anthropology in general and how it contributes to understanding and improving contemporary society, and (2) a particular field of anthropology in greater depth.

PLO 4 Be able to function effectively in at least one content area or domain of application.

PLO 5 Understand personal, political and ethical issues inherent in research and application.

PLO 6 Develop professionally as practitioners with skills in contracting, project management, and budgeting, as well as the ability to communicate about project goals and findings and the discipline of anthropology to diverse audiences.

PLO 7 Be knowledgeable about the region as a social and cultural system with complex state national and global interconnections.

Archives and Records Administration, MARA

PLO 1 Articulate the ethics, values, and foundational principles of archives and records management professionals and appreciate the important role record keepers play in social memory and organizational accountability.

PLO 2 Recognize the social, cultural, and economic dimensions of records, recordkeeping, and records use.

PLO 3 Understand the evolution of information recordkeeping systems in response to technological change.

PLO 4 Have expertise in the basic concepts and principles used to identify, evaluate, select, organize, maintain, and

provide access to records of current and enduring value.

PLO 5 Understand the system of standards and structures endorsed and utilized by the recordkeeping professions, particularly in the areas of electronic records and digital assets management.

PLO 6 Apply fundamental management theories and principles to the administration of records and recordkeeping organizations.

PLO 7 Know the legal requirements and ethical principles involved in records management and the role the recordkeeper plays in institutional compliance and risk management.

PLO 8 Be conversant with current information technologies and best practices relating to records preservation and security.

PLO 9 Understand research design and research methods and possess the analytical, written, and oral communication skills to synthesize and disseminate research findings.

PLO 10 Identify ways in which archivists and records managers can contribute to the cultural, economic, educational, and social well being of our global communities.

Art, Art History and Visual Culture Concentration, MA

PLO 1 Art History Knowledge - Demonstrate knowledge (visual recognition and identification) of significant artworks and of the canon of historical periods customary in Western and Non-Western traditions.

PLO 2 Art History Skills - Demonstrate increasing skills of visual analysis appropriate to describing and explaining artworks from a variety of historical contexts.

PLO 3 Writing and Research - Demonstrate the writing and research skills necessary for the accurate and complete investigation and communication of art historical information.

PLO 4 Methodology - Demonstrate a theoretical, historiographic, and professional understanding of the discipline of Art History and apply this understanding to explaining and solving research problems.

Art, MFA (Concentrations in Digital Media Art, Photography, Pictorial Art, and Spatial Art)

PLO 1 Demonstrate Advanced Artistic Creation: Produce complex, innovative artworks demonstrating mastery in diverse techniques and conceptual depth.

PLO 2 Apply Critical Analysis and Scholarly Research: Develop a deep theoretical and historical understanding that informs artistic practice.

PLO 3 Demonstrate Professional Practice and Teaching Readiness: Prepare for diverse professional roles through exhibition design, curatorial practice, and teaching.

PLO 4 Integrate Interdisciplinary Approaches, Global Perspectives, and Ethical Practices: Engage with interdisciplinary approaches, global perspectives, and advocate for ethical practices within the art community.

Artificial Intelligence, MS

PLO 1 Identify and apply fundamental concepts, algorithms, and methodologies to formulate, analyze, design, and evaluate artificial intelligence and machine learning systems.

PLO 2 Tackle complex machine learning and artificial intelligence problems using contemporary principles, algorithms, technologies, methodologies, and tools.

PLO 3 Lead and participate in a team to develop AI and machine learning applications.

PLO 4 Recognize the ethical, economic and environmental implications of their work, as appropriate.

PLO 5 Sustain a process of life-long learning in engineering or other professional areas.

PLO 6 Communicate effectively and persuasively with a variety of audiences.

Audiology, AUD

PLO 1 Specialized Knowledge - Recall, apply, and synthesize their knowledge of the hearing and balance mechanisms, including normal processes, disorders, and treatments.

PLO 1A Demonstrate knowledge and skill competencies outlined by the Council on Academic Accreditation (CAA) and the Accreditation Commission for Audiology Education (ACAE).

PLO 2 Social Responsibilities - Summarize and describe the contexts in which they may practice audiology and advise patients, with attention to local and culturally sensitive models of health care.

PLO 2A Demonstrate the ability to act ethically, intentionally, and conscientiously regarding issues related to inclusion and diversity.

PLO 3 Intellectual Skills - Correctly interpret theories, assumptions, and protocols appropriate to audiology practice (i.e., diagnosis and treatment) within quantitative and qualitative methodologies. They will also demonstrate the ability to think critically and creatively, effectively communicate, gather and process information thoroughly and ethically, write in a scientific voice, and engage in inter-professional activities.

PLO 4 Integrative Knowledge and Skills - Design, complete, and present a scholarly research project that will reflect the depth of contemporary audiology knowledge and contribute to knowledge in hearing science or to improvements in audiology practice, policy, or client outcomes.

PLO 5 Applied Knowledge and Skills - Apply classroom theories and prior clinical experiences to new clinical settings, age groups, disorders, technologies, and devices, with increasing speed, effectiveness, and independence.

B

Bioinformatics, MS

PLO 1 Demonstrate effective scientific written communication skills.

PLO 2 Demonstrate effective scientific oral communication skills.

PLO 3 Demonstrate the ability to independently answer complex biological questions using computational methods.

PLO 4 Demonstrate the ability to develop a research plan using information gained through critical analysis of primary literature

Biological Sciences, MA

PLO 1 Develop effective written communication skills, as assessed by a research proposal at baseline, followed by a written exam.

PLO 2 Develop effective oral communication skills, as assessed by a research proposal at baseline, followed by an oral exam.

PLO 3 Demonstrate the ability to independently answer questions regarding their specific field of study, as assessed by a research proposal at baseline, followed by an oral exam.

PLO 4 Demonstrate the ability to develop, present, defend and critically analyze hypotheses and conclusions using information gained through searches of primary literature, as assessed by a research proposal at baseline, followed by an oral exam.

Biological Science, MS (concentrations in General Biology, Ecology and Evolution, Molecular Biology and Microbiology, and Physiology)

PLO 1 Develop effective written communication skills, as assessed by a research proposal at baseline, followed by a written thesis or project.

PLO 2 Develop effective oral communication skills, as assessed by a research proposal at baseline, followed by an oral presentation.

PLO 3 Demonstrate the ability to independently answer questions regarding their specific field of research, as assessed by a research proposal at baseline, followed by an oral presentation.

PLO 4 Demonstrate the ability to develop, present, and defend a research plan using information gained through preliminary experiments as well as critical analysis of primary literature, as assessed by a research proposal at baseline, followed by a written thesis or project.

Biomedical Engineering, MS (Concentrations in General Biomedical Engineering and Biomedical Devices)

PLO 1 Solve complex engineering problems and tasks, and use engineering, science and statistics principles to justify recommendations.

PLO 2 Evaluate the impact of their work on society, including ethical, economic, global and environmental aspects.

PLO 3 Can deliver effective presentations of engineering results in written and oral formats.

PLO 4 Have life-long learning skills and are able to apply their engineering knowledge to critically evaluate relevant

literature and new technologies or systems.

PLO 5 Are effective leaders, capable of working in diverse environments.

PLO 6 Are able to apply their engineering education to a variety of career paths.

Biotechnology, MBT

PLO 1 Apply the five ACRL (Assoc. of College Research Librarians) standards.

PLO 2 Demonstrate advanced understanding of topics at the interface of biology and business central to the biotechnology industry.

PLO 3 Demonstrate their ability to efficiently work in teams.

PLO 4 Demonstrate their ability to communicate effectively, verbally and written, to convey scientific and commercial ideas.

Business Administration, MBA (Including Early Career and Professional Programs)

PLO 1 Demonstrate knowledge of key business functions and the technologies that enable them.

PLO 2 Apply analytical models and data-driven methods for making business decisions.

PLO 3A Evaluate the benefits and complexities of cultural diversity.

PLO 3B Develop strategies for organizations to adapt to global and social changes.

PLO 4 Develop ethical managerial decisions that consider all stakeholders.

PLO 5 Identify factors that contribute to effective leadership and demonstrate the skills and behaviors necessary to be a productive team member.

PLO 6 Integrate knowledge and formulate strategies to deliver value to customers and society.

PLO 7 Deliver effective oral and written communications in the digital era.

C

Chemical Engineering, MS

PLO 1 Are able to solve complex engineering problems and tasks, and use engineering, science and statistics principles to justify recommendations.

PLO 2 Are able to evaluate the impact of their work on society, including ethical, economic, global and environmental aspects.

PLO 3 Can deliver effective presentations of engineering results in written and oral formats.

PLO 4 Have life-long learning skills and are able to apply their engineering knowledge to critically evaluate relevant literature and new technologies or systems.

PLO 5 Are effective leaders, capable of working in diverse environments.

PLO 6 Are able to apply their engineering education to a variety of career paths.

Chemistry, MA

PLO 1 Demonstrate an advanced understanding of selected topics in chemistry.

PLO 2 Demonstrate information literacy skills for acquiring knowledge of chemistry, both as a student and as a life-long learner.

PLO 3 Demonstrate an understanding of experimentation, observation and data analysis, and their application to defined questions in chemistry.

PLO 4 Demonstrate a familiarity with available instrumentation for conducting specific scientific research.

PLO 5 Communicate effectively, verbally and written, for the purposes of conveying chemical information to both professional scientists and to the public.

Chemistry, MS

PLO 1 Demonstrate an advanced understanding of selected topics in chemistry.

PLO 2 Demonstrate information literacy skills for acquiring knowledge of chemistry, both as a student and as a life-long learner.

PLO 3 Demonstrate an understanding of experimentation, observation and data analysis, and their application to

defined questions in chemistry.

PLO 4 Demonstrate a familiarity with available instrumentation for conducting specific scientific research.

PLO 5 Communicate effectively, verbally and written, for the purposes of conveying chemical information to both professional scientists and to the public.

Chicana and Chicano Studies, MA

PLO 1 Identify and analyze the major issues, questions, and debates driving theory and research in Chicana/o Studies through written and oral discourse, particularly the central role of race and ethnicity and its intersectional relationship to other socially constructed categories, such as gender, class/SES, and normative heterosexuality, and its historically evolving role in shaping individual and group identities, opportunities, and outcomes in US institutions.

PLO 2 Analyze major theories, paradigms, and methods used to study Chicana and Latinx communities historically and today, critically evaluate scholarship in the discipline, and conduct an ethically-based research, creative, or community-based project in Chicana/o Studies.

PLO 3 Effectively present and write insights related to PLOs 1 & 2 in chosen area of emphasis through capstone project that demonstrates the significance of this work and is adequate for effective instruction at the college level.

Child and Adolescent Development, MA

PLO 1 Design developmentally appropriate practices to effectively address the individual and collective needs of children, families, and communities.

PLO 2 Critically analyze different sources of information to evaluate evidence-based practices in social policy, education, and interventions relevant to child and adolescent development.

PLO 3 Synthesize and translate evidence-based research and information from varied perspectives to communicate with different audiences.

PLO 4 Demonstrate collaborative leadership skills to implement culturally- and linguistically-responsive practices that ensure equity and respect for individual children, families, and staff, as well as the broader community respect to credibility and validity and determine the appropriate contexts to use each type of source.

Civil Engineering, MS

PLO 1 Apply advanced concepts, theory and analysis for problem solving.

PLO 2 Synthesize and integrate necessary engineering concepts into the engineering solution process.

PLO 3 Apply modern tools for computations, simulations, analysis and design.

PLO 4 Communicate effectively.

Clinical Psychology, MS

PLO 1.1 Students will be able to apply, compare, and contrast a variety of psychotherapy theories and implement at least one chosen theory or intervention with clinical case material.

PLO 1.2 Students will be able to evaluate, select, and implement empirically supported clinical interventions for clinical case material and clients.

PLO 2.1 Students will be able to integrate and communicate clinical case material.

PLO 2.2 Students will be able to synthesize contextual and cultural variables into their understanding of and presentation of client materials.

PLO 2.3 Students will effectively respond to queries about clinical material and engage in discussions about their clients with supervisors and peers.

PLO 2.4 Students will be able to analyze cases other than those they are treating, applying theories, principles, and relevant empirical findings to those cases.

PLO 3.1 Students will be able to evaluate, select, and implement different assessment devices and strategies for assessing client outcomes and processes of change over the course of treatment including nomothetic and idiographic approaches.

PLO 4.1 Students will demonstrate competency consistent with professional standards of practice in areas including, but not limited to, psychotherapy theory, service delivery, ethics, assessment, research methods, family/couples therapy, cultural diversity and humility, risk management and safety planning, psychopharmacology, and issues

relevant to adult and child clinical populations.

PLO 5.1 Students will demonstrate fulfillment of coursework and other pre-degree licensing requirements outlined by the Board of Behavioral Sciences.

Communication Studies, MA

PLO 1 Students will evaluate communication-related theories, their philosophical assumptions, and their potential for developing knowledge.

PLO 2 Students will distinguish the ethical implications (e.g., positionality, racial equity, social justice, accessibility, and citational politics) among specific communication-related theories, modes of inquiry, and practices.

PLO 3 Students will justify modes of inquiry used for communication research and creative activity.

PLO 4 Students will propose scholarly research and/or creative activity of their own, employing one or more modes of inquiry.

PLO 5 Students will produce advanced scholarly writing that considers inclusivity amid disciplinary conventions.

PLO 6 Students will argue their intellectual and creative contributions in scholarly conversation.

PLO 7 Students will articulate practical application of the knowledge generated from communication research and/or creative activity (e.g., policy, pedagogy, activism).

Computational Linguistics, MS

PLO 1 Apply fundamental understandings and knowledge of diverse forms of languages and linguistic phenomena for computational analysis.

PLO 2 Design, implement, and evaluate theoretical models of linguistic phenomena and Natural Language Processing tasks that involve computer processing of human language.

PLO 3 Recognize professional responsibilities and make informed judgments in computational linguistics practice based on ethical and legal principles.

PLO 4 Integrate linguistic theory, advanced computing principles, and tools in the science of language and employ the resulting knowledge and skills to produce computational and linguistic solutions.

Computer Engineering, MS

PLO 1 Demonstrate an understanding of advanced knowledge of the practice of computer engineering, from vision to analysis, design, validation, and deployment.

PLO 2 Tackle complex engineering problems and tasks using contemporary engineering principles, methodologies and tools.

PLO 3 Demonstrate leadership and the ability to participate in teamwork in an environment with different disciplines of engineering, science, and business.

PLO 4 Be aware of ethical, economic, and environmental implications of their work, as appropriate.

PLO 5 Advance successfully in the engineering profession and sustain a process of life-long learning in engineering or other professional areas.

PLO 6 Communicate effectively in both oral and written forms.

Computer Science, MS

PLO 1 Breadth of knowledge in computer science with course work in at least three of the subject areas Foundations, Architecture, Systems Software, Specialty.

PLO 2 Depth of knowledge in an advanced topic in computer science, including the ability to carry out original work that builds upon the existing body of knowledge in the field.

PLO 3 Ability to communicate effectively both orally and in writing Computer Science topics to researchers, practitioners, and the public.

Counseling and Guidance, MA

- PLO 1** Design culturally sustaining prevention and intervention counseling programs within educational environments.
- PLO 2** Model ethical and inclusive leadership skills that promote equity, social justice, and student success.
- PLO 3** Apply effective and inclusive assessment practices within their work with school and community stakeholders.
- PLO 4** Create social, cultural, and educational interventions that support students' academic advancement.
- PLO 5** Select and apply relevant research methods to conduct program evaluations, supported by effective technological applications.

Creative Writing, MFA

- PLO 1** Demonstrate a high level of ability to write and complete a publishable, full-length work of literature in a primary genre concentration (fiction, creative nonfiction, poetry, or scriptwriting).
- PLO 2** Demonstrate a high level of proficiency to write works of literature in a secondary genre concentration (fiction, creative nonfiction, poetry, or scriptwriting).
- PLO 3** Demonstrate an appropriate level of knowledge of literary history, literary theory, and craft and theory of creative writing.
- PLO 4** Demonstrate critical and analytical skills in the evaluation and interpretation of literary texts.
- PLO 5** Demonstrate a command of written academic English, including the abilities to: a) organize and present material in a cogent fashion; b) formulate and defend original arguments; c) employ effectively the language of their discipline; d) write under time constraints.

Criminology, Global Criminology Concentration, MS

- PLO 1** Describe ways to create social change through a critical understanding of the local and global dimensions of crime.
- PLO 2** Articulate and evaluate scholarly-grounded perspectives on issues of crime and justice, including ways that criminology explains crime and reactions to crime, through academic, professional and social media.
- PLO 3** Explain theories, assumptions, foundational knowledge, analytical and interpretive protocols, tools, and technologies within the field of criminology at a level demonstrating preparation for advanced professional responsibilities, or pursuing a PhD in criminology-related areas.
- PLO 4** Demonstrate skills in each step of an investigative, creative, or practical project (e.g., brainstorming, planning, formulating hypotheses or complex questions, designing, creating, completing, and communicating) that helps advance understanding of a criminological or related issue.
- PLO 5** Employ global perspectives on criminology and concepts of justice to support research-informed solutions to contemporary social problems.

D

Data Analytics, MS

- PLO 1** Integrate multidisciplinary knowledge to engage in practical data analytics projects, from analyzing requirements to managing data, building models, presenting results, and assessing societal impacts.
- PLO 2** Identify, use, and evaluate current and emerging multidisciplinary data analytics technologies and tools.
- PLO 3** Apply effective oral and written communication skills necessary to professional work including collaboration and presentation to multidisciplinary audiences.
- PLO 4** Perform research in applying data analytics to specific domains.
- PLO 5** Utilize quantitative skills from a rich foundation of essential knowledge to solve complex, dynamic, and practical data analytics problems in various professional domains.
- PLO 6** Work productively as individuals and in teamwork to perform data analytics tasks as part of a multidisciplinary team.
- PLO 7** Identify ways in which data analytics professionals can contribute to the cultural, economic, educational and social well-being in diverse and multicultural local, national and global contexts.

Data Science, MS

- PLO 1** Apply computer science knowledge and tools to assist in performing data science tasks.
- PLO 2** Summarize and evaluate statistical and machine learning concepts, models and techniques.
- PLO 3** Integrate multidisciplinary knowledge and software to tackle challenging, complex data science tasks.
- PLO 4** Communicate effectively, both orally and in writing, data science concepts, algorithms, and results to a broad audience.
- PLO 5** Identify ways in which data scientists can contribute to the cultural and economic well-beings of diverse societies in local, national and global scopes.

Design, MDes

- PLO1** Utilize creative research methodologies to investigate, discover, and understand complex problems.
- PLO2** Plan, implement, and evaluate creative projects that consider technological, ecological, socio-economic, and/or global contexts.
- PLO3** Employ creative practice and technology to conceptualize unique solution for complex problems as part of a culminating project.
- PLO4** Demonstrate the ability to create, participate in and lead interdisciplinary and collaborative creative projects.

E

Economics, MA (Concentrations in General Economics and Applied Economics)

- PLO 1** Students will be able to use microeconomic theory to understand and explain the determinants of prices, optimal behavior in strategic situations, and welfare effects in markets, and to critique real-world policy.
- PLO 2** Students will be able to use macroeconomic theory to understand and explain economic growth, business cycles, and monetary policy, as well as to critique real-world macroeconomic policy.
- PLO 3** Describe an economic study that illustrates one of the following methods of economic inquiry: Applied Econometrics, Experimental Economics, or Other (Analytical Narrative, Cost-Benefit Analysis, Simulation, etc.).
- PLO 4** List the subfields of economics and explain the JEL system, describe the contours of economics as a scholarly discipline, and describe in detail one of the two subfields: Economic History / Economic Thought or Econometrics.
- PLO 5** Generate and apply new knowledge to an economics problem, using theory and methods of economic inquiry, and communicate the results through academic writing, speaking, and presentation.

Education, Curriculum and Instruction (LACES) Concentration, MA Discontinued Eff Fall 2024

- PLO 1** Understand foundational and theoretical literature related to education in a specific content area (e.g., literacy, mathematics, science, social studies, etc.).
- PLO 2** Understand how to critically examine and evaluate methods of instruction including those used with struggling K- 12 learners and non-native speakers of English.
- PLO 3** Use ongoing assessment data to teach students from diverse linguistic and cultural backgrounds.
- PLO 4** Discuss and critique different perspectives of curriculum and explore how these perspectives relate to K-12 classrooms and schooling.
- PLO 5** Discuss and identify the important aspects of history, language, and culture undergirding assumptions, values, and beliefs of competing perspectives in education.
- PLO 6** Review and critique theoretical and research literature in one's field of interest.
- PLO 7** Design and implement a study to address a question in one's field of interest that supports a defensible conclusion and considers relevant implications.

Educational Leadership, Concentration in Emancipatory School Leadership, MA

- PLO 1** Build organizational cultures that reflect the diversity of experience and knowledge within school communities.
- PLO 2** Identify approaches to educational leadership that include the cultural wealth present in communities that schools serve.
- PLO 3** Design professional development that challenges bias and inequity in school settings.

PLO 4 Create culturally sustaining approaches to instructional leadership.

PLO 5 Implement policies and practices that reflect emancipatory school leadership principles.

Educational Leadership, EdD (Fully Online)

PLO 1 Analyze the relationship between system structure and system behavior and propose appropriate structural changes to bring about desirable educational outcomes.

PLO 2 Compare and contrast the strengths and limitations of research and scholarly literature, on the basis of validity, reliability, credibility, bias, and interpretability.

PLO 3 Apply systemic leadership perspectives for creatively addressing complex challenges in educational settings.

PLO 4 Apply concepts such as validity, reliability, bias, and consequences to evaluate the technical quality of qualitative and quantitative data.

PLO 5 Analyze current education policy and school reform trends for equity with integration of research, policy, and practical considerations.

PLO 6 Design and evaluate educational organizations to foster learner-centered teaching, learning, and research-based professional development.

PLO 7 Analyze the role of political, social, and economic forces in perpetuating opportunity gaps for BIPOC and other minoritized learners in K-20 educational institutions.

Electrical Engineering, MS

PLO 1 Base analysis, problem-solving and design on core advanced EE theory.

PLO 2 Demonstrate high-level of expertise and competence in an area of concentration in electrical engineering.

PLO 3 Apply modern tools for research, computation, simulations, analysis, and design.

PLO 4 Demonstrate leadership skills in the workplace, to function professionally in a globally competitive world, and to communicate engineering results effectively.

Engineering, MS

PLO 1 Evaluate and apply advanced engineering principles, methods, and tools to solving problems or improving efficiency.

PLO 2 Design and implement a component, system, or process to meet design specifications and objectives.

PLO 3 Understand and advance the frontiers of emerging technologies.

PLO 4 Understand the social, economic and political context of contemporary engineering practice and its ethics and understand the impact of engineering solutions on society and the environment.

PLO 5 Communicate effectively in both oral and written forms.

Engineering Management, MS

PLO 1 Have an advanced level of ability in applying engineering management knowledge in engineering management decision making.

PLO 2 Have an advanced level of ability in identifying, formulating, analyzing, and solving managerial decision-making problems.

PLO 3 Have an advanced level of ability in effectively interpreting, communicating, and implementing managerial solutions of technical and non-technical problems.

PLO 4 Recognize the need for and to engage in life-long learning.

PLO 5 Recognize professional and ethical responsibility.

PLO 6 Recognize different types of leadership in different types of organizational structures.

PLO 7 Have an advanced level of ability in using techniques and skills in constructing lean solutions to organizational technical problems.

PLO 8 Have an advanced level of ability in constructing economical, environmentally friendly, and socially responsible managerial decisions.

Engineering Technology, MS

PLO 1 Apply advanced analytical, computational, engineering fundamentals, as well as technical and managerial skills to problem solving to improve reliability, security and efficiency of production, services and operational facilities.

PLO 2 Demonstrate leadership and managerial skills to communicate problems, processes, and solutions to management and relevant audiences using proper technical and analytical tools.

PLO 3 Conduct independent research, analyze and interpret data and apply the result for improving engineering and technology systems through effective project management methods.

PLO 4 Evaluate technology systems, operations, products, and processes related to sustainable products, advanced manufacturing, and computer networks to identify failures and problems using engineering concepts and tools and propose solutions for system improvement.

PLO 5 Demonstrate professionalism with commitment to ethical principles and pursuit of excellence in engineering technology careers and leadership positions.

Engineering, Electronic Materials and Devices Concentration, MS (Discontinued Eff Fall 2024)

PLO 1 Work individually or collaboratively to plan and develop deliverables to meet project specifications and requirements.

PLO 2 Apply advanced theory, engineering practice and analytical methods to solve engineering problems.

PLO 3 Create written documents and deliver oral presentations for a range of audiences.

PLO 4 Appraise ethical, social, economic, and environmental implications of engineering practice in local and global contexts.

English, MA

PLO 1 Demonstrate an appropriate level of expertise in literary history, literary theory, and rhetoric.

PLO 2 Demonstrate high-level proficiency in literary research and in the synthesis of research.

PLO 3 Demonstrate critical and analytical skills in the interpretation and evaluation of literary texts.

PLO 4 Demonstrate a command of written academic English, including the abilities to a) organize and present material in a cogent fashion, b) formulate and defend original arguments, c) employ effectively the language of their discipline and d) write under time constraints.

Environmental Studies, MS

PLO 1 Thoroughly review literature and research in a specific area of environmental studies and be able to formulate original research questions based on critical analysis of aforementioned review.

PLO 2 Develop appropriate and feasible methods for original research project.

PLO 3 Possess thorough knowledge of the history of environmental thought.

PLO 4 Carry out original research plan and write a high-quality scholarly thesis or professional report.

PLO 5 Present original research results in a public oral defense.

F

Finance, MS

PLO 1 Financial Management Knowledge: Apply financial management and accounting principles within the context of a complex business environment.

PLO 2 Financial Management Solutions: Develop value-enhancing financial solutions employing evidence-based methods and appropriate technology.

PLO 3 Ethical Awareness: Evaluate the ethical implications of financial management practices.

PLO 4 Effective Communication: Demonstrate effective oral and written communication skills in the context of financial management.

G

Geographic Information Science (GISc), MS (Accepting Students for Fall 2025)

PLO 1 Analyze geographic patterns in different data types for measuring spatial statistical models to detect non-randomness.

PLO 2 Use alternative open source tools for practicing GIS besides licensed and conventional platforms for hosting, data development, processing, and sharing.

PLO 3 Design, evaluate, develop and execute on a GIS project with the appropriate GIS different concepts, spatial analytics and visualization techniques, and datasets to solve a variety of spatial problems.

PLO 4 Apply and incorporate the applications of data ethics and literacy in GIS projects.

Geography, MA

PLO 1 Critically evaluate and interpret published research on the theoretical foundations of geographical information science.

PLO 2 Explain contemporary issues in geographic information science in the context of current theory.

PLO 3 Define a research problem and design and execute a research program.

PLO 4 Evaluate and interpret research results in the context of current theory.

PLO 5 Communicate research results in written, graphic, and verbal form.

PLO 6 Demonstrate understanding of how geographic information science and technology may be applied to a variety of problems.

Geology, MS

PLO 1 Formulate scientifically sound and logistically reasonable plans for solving geologic problems.

PLO 2 Apply the appropriate techniques to acquire and interpret data to arrive at scientifically sound conclusions.

PLO 3 Demonstrate scientific writing of acceptable quality.

PLO 4 Demonstrate the ability to present results of scientific research in oral format.

H

Higher Education Leadership, MA

PLO 1 Identify the complex history and dimensions that define the discipline of higher education.

PLO 2 Plan for transformative organizational change through a critical and praxis-based approach to diversity, access, equity, and inclusion.

PLO 3 Analyze the roles and interests of the varied stakeholders that characterize and sustain the enterprise of higher education.

PLO 4 Develop the skills to foster responsive, cooperative, mutually beneficial, and ethically sound internal and external relationships with campus and community constituents.

PLO 5 Identify the ethics and values that distinguish higher education as a "public good" versus a "private good".

History, MA

PLO 1 Identify, summarize, and synthesize historical arguments about how peoples and societies evolved across time and space.

PLO 2 Interpret, evaluate, compare, and critique historiographical arguments.

PLO 3 Construct persuasive evidence-based historical arguments using original research including primary sources.

Human Factors/Ergonomics, MS

PLO 1 Have an ability to apply knowledge of the sciences of human factors and workplace ergonomics.

PLO 2 Have an ability to design and conduct experiments, as well as to analyze and interpret data.

PLO 3 Have an ability to design a system, component, or process to meet accepted human factors and workplace ergonomics standards within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.

- PLO 4** Have an ability to function on multi-disciplinary teams.
- PLO 5** Have an ability to identify, formulate and solve human factors and workplace ergonomics problems.
- PLO 6** Understand professional and ethical responsibility.
- PLO 7** Have an ability to communicate effectively.
- PLO 8** Have the broad education necessary to understand the impact of human factors and workplace ergonomics solutions in a global, economic, environmental, and societal context.
- PLO 9** Have a recognition of the need for, and an ability to engage in, life-long learning.
- PLO 10** Have the knowledge of contemporary issues.
- PLO 11** Have an ability to use the techniques, skills, and modern human factors and workplace ergonomics tools necessary for industrial and systems engineering practice.

Human Factors/Ergonomics, User Experience Concentration, MS

- PLO 1** Apply research, knowledge, and methods of human factors and workplace ergonomics to improve human-machine systems.
- PLO 2** Design, implement, interpret, and communicate the results of user research, including experiments and usability testing.
- PLO 3** Ethically design systems, components, and processes to meet human factors and workplace ergonomic standards while incorporating realistic constraints.

I

Industrial and Systems Engineering, MS

- PLO 1** Apply discipline knowledge and provide effective leadership to derive solutions to problems/challenges within an organization.
- PLO 2** Effectively and productively participate in teams.
- PLO 3** Recognize organizational processes and behaviors.
- PLO 4** Have an advanced level of ability in collecting, analyzing, and interpreting data.
- PLO 5** Have an advanced level of ability in synthesizing and designing solutions for unstructured problems.
- PLO 6** Have an advanced level of ability in evaluating the impact of these solutions in the broader context of the organization and society.
- PLO 7** Have an advanced level of ability in effectively communicating solutions in the form of written, oral and electronic media.
- PLO 8** Have an advanced level knowledge of methodological and computational skills with which they are able to operate (apply) effectively.
- PLO 9** Develop skills to support life-long learning within the field of profession of ISE.

Informatics, MS

- PLO 1** Apply technology informatics skills to solve specific industry data and information management problems, with a focus on usability and designing for users.
- PLO 2** Evaluate, manage, and develop electronic records programs and applications in a specific organizational setting.
- PLO 3** Demonstrate strong understanding of security and ethics issues related to informatics, user interface, and inter-professional application of informatics in specific fields by designing and implementing appropriate information assurance and ethics and privacy solutions.
- PLO 4** Identify user needs, ideate informatics products and services, prototype new concepts, and evaluate a prototype's usability.
- PLO 5** Work collaboratively in teams and use project management practices effectively to solve user-centric information and data problems.
- PLO 6** Conduct informatics analysis and visualization applied to different real-world fields, such as health science and sports.

J

Justice Studies, MS

PLO 1 Evaluate the relationships between social justice and criminal justice across different societies and historical periods.

PLO 2 Demonstrate knowledge and skills needed to fulfill professional responsibilities or to pursue further postgraduate education in justice-related fields.

PLO 3 Synthesize knowledge of scholarly approaches, theoretical perspectives, empirical findings, and historical trends within the subject areas of criminal justice and social justice.

PLO 4 Design, implement, and evaluate research projects in the fields of criminal and social justice, including data collection, analysis, and interpretation.

PLO 5 Apply multidisciplinary notions and principles of justice when formulating responses to social problems in communities and/or justice-related institutions.

K

Kinesiology, MS

PLO 1 Demonstrate the ability to conduct and critique research using theoretical and applied knowledge.

PLO 2 Interpret and synthesize research findings to a variety of disciplines within Kinesiology.

PLO 3 Effectively communicate essential theories, scientific applications, and ethical considerations in each student's Kinesiology program specialization.

PLO 4 Interpret and apply research findings through acquired skills in order to become agents of change to address issues in Kinesiology through the application of knowledge and research.

L

Library and Information Science, MLIS

PLO 1 Demonstrate awareness of the ethics, values, and foundational principles of one of the information professions, and discuss the importance of those principles within that profession.

PLO 2 Describe and compare different organizational settings in which information professionals' practice.

PLO 3 Articulate the importance of designing programs and services supportive of diversity, inclusion, and equity for clientele and employees.

PLO 4 Apply the fundamental principles of planning, management, marketing, and advocacy.

PLO 5 Design, query, and evaluate information retrieval systems.

PLO 6 Use the basic concepts and principles related to the selection, evaluation, organization, and preservation of physical and digital information items.

PLO 7 Demonstrate understanding of basic principles and standards involved in organizing information such as classification and controlled vocabulary systems, cataloging systems, metadata schemas or other systems for making information accessible to a particular clientele.

PLO 8 Demonstrate proficiency in identifying, using, and evaluating current and emerging information and communication technologies.

PLO 9 Describe the fundamental concepts of information-seeking behaviors and how they should be considered when connecting individuals or groups with accurate, relevant and appropriate information.

PLO 10 Design collaborative or individual learning experiences based on learning principles and theories.

PLO 11 Demonstrate understanding of quantitative and qualitative research methods, the ability to design a research project, and the ability to evaluate and synthesize research literature.

PLO 12 Demonstrate professional leadership and communication skills.

PLO 13 Evaluate programs and services using measurable criteria.

PLO 14 Understand global perspectives on effective information practices that are supportive of cultural, economic, educational, or social well-being.

Linguistics, MA (Not Accepting Students)

PLO 1A Transcribe, using the International Phonetic Alphabet, and produce speech sounds of the world's languages. Apply concepts of acoustic theory in analyses of speech data.

PLO 1B Analyze linguistic sound patterns in terms of their function, their structure, and the pressures that influence their change over time.

PLO 1C Analyze sentence structure of typologically diverse languages using current formalism and explain how syntactic and semantic structures interface.

PLO 1D Analyze the meaning of linguistic expressions, elaborate on the role of linguistic, pragmatic, and cultural context in the interpretation of meaning, and understand the role of theories in the analysis of semantic data.

PLO 1E Show an understanding of current linguistic theories; compare and evaluate different theoretical approaches.

PLO 2A Extract patterns from complex data sets, motivate categorization procedures, and apply learned analytical principles over such patterns.

PLO 2B Carry out independent empirical, experimental or theoretical research involving formulating a research project, presenting a literature review, using appropriate methodology, collecting data pertinent to the project, and interpreting the data.

PLO 2C Use library and electronic research sources effectively.

PLO 2D Use reading and writing and oral skills effectively.

PLO 2E Demonstrate proficiency equivalent to a two-year of an Indo-European or a one-year of a non- Indo-European college level study in a language other than their native language.

PLO 3A Discuss issues in speech synthesis, speech recognition, natural language processing, and develop speech recognition, speech synthesis and natural language processing programs.

PLO 3B Evaluate theories of first and second language acquisition, and second language teaching.

PLO 3C Apply linguistic knowledge to address societal issues related to language variation and diversity, and intercultural communication.

PLO 3D Recognize the relation between language and cognition and evaluate theories of their interaction.

PLO 3E Identify phonological, morphological, syntactic and semantic changes in the history of a language, discuss the contribution of social factors to language variation and change, explain the genetic and typological classification of languages, and use the comparative method to reconstruct ancestors of related languages.

PLO 4 Instill in students an appreciation for the diversity and dynamic nature of human languages and cultures in the U.S. and the world.

M

Marine Science, MS

PLO 1A Demonstrate an understanding of fundamental concepts in a particular category of oceanography and marine science.

PLO 1B Be able to synthesize and integrate across all of these fields, yet achieve a depth of understanding in the student's individual specialty or field of study.

PLO 2 Demonstrate the ability to critically analyze scientific research, whether the student's own research, or that performed by others.

PLO 3 Pose relevant scientific hypotheses or questions that may then serve to guide thesis research.

PLO 4 Demonstrate proficiency in the design and implementation of experiments or data collection methodologies to address specific hypotheses/questions.

PLO 5 Master the skills and tools of data collection and analysis (including analytical and statistical techniques as appropriate) specific to the student's scientific field of study.

PLO 6 Demonstrate the ability to place one's own research within the larger context of relevant field of scientific study

and to clearly identify the implications of this research for that field.

PLO 7 Demonstrate proficiency in oral and written communication by being able to present research clearly and concisely. This includes thoughtful and thorough oral and written presentation of their thesis and their responses to questions.

Mass Communications, MS

PLO 1 Demonstrate knowledge of the diversity of groups in a global society in relationship to communications.

PLO 2 Demonstrate the ability to think critically, creatively and independently.

PLO 3 Write correctly and clearly in forms and styles appropriate for the communications professions, audiences, and purposes they serve.

PLO 4 Demonstrate the ability to use tools and technologies appropriate for the communications professions in which they work.

Materials Engineering, MS

PLO 1 Are able to solve complex engineering problems and tasks, and use engineering, science and statistics principles to justify recommendations.

PLO 2 Are able to evaluate the impact of their work on society, including ethical, economic, global and environmental aspects.

PLO 3 Can deliver effective presentations of engineering results in written and oral formats.

PLO 4 Have life-long learning skills and are able to apply their engineering knowledge to critically evaluate relevant literature and new technologies or systems.

PLO 5 Are effective leaders, capable of working in diverse environments.

PLO 6 Are able to apply their engineering education to a variety of career paths.

Mathematics, MA

PLO 1 Demonstrate proficiency in graduate-level abstract algebra.

PLO 2 Demonstrate proficiency in graduate-level real analysis.

PLO 3 Evaluate and synthesize research articles in their subfield of mathematics.

PLO 4 Demonstrate effective written communication of advanced mathematics.

PLO 5 Demonstrate effective oral communication of advanced mathematics.

Applied Mathematics, MS

PLO 1 Orally communicate applied mathematics concepts.

PLO 2 Create mathematical models in applied mathematics.

PLO 3 Perform computations and analyze the accuracy of the results.

Mechanical Engineering, MS

PLO 1 A strong foundation beyond the undergraduate level in their chosen focus area as well as in mathematics, basic science and engineering fundamentals, to successfully compete for technical engineering positions in the local, national and global engineering market, advance in their current position or pursue doctoral studies.

PLO 2 Professional and lifelong learning skills to be able to apply and extend theory to solve practical contemporary engineering problems.

PLO 3 The expertise necessary to design mechanical engineering systems with possible specialization in areas such as energy systems, electronics cooling, electronics packaging & reliability, finite element analysis & CAD, mechatronics & MEMS, product design, robotics, automation & manufacturing.

PLO 4 Strong verbal and written communication skills, including the ability to read, write and comprehend technical documents.

PLO 5 Think and work independently to perform design and in-depth analysis in solving open-ended mechanical engineering problems.

Medical Product Development Management, MS

PLO 1 Demonstrate the ability to write a cited, research review paper or design an independent research project that addresses an issue in clinical research / clinical trials.

PLO 2 Demonstrate knowledge of the clinical trial skills and Good Clinical Practices (GCP) relevant to safely and effectively conduct clinical research in human participants

PLO 3 Demonstrate proficiency in scientific writing skills by effectively writing an advanced research paper

PLO 4 Exhibit proficiency in oral presentation skills by effectively presenting project outcome or experience.

PLO 5 Demonstrate leadership, teamwork, and decision-making skills by effectively conducting a capstone / culminating

Meteorology, MS

PLO 1 Conduct an independent research project, and communicate the results in written and oral form in acceptable professional formats.

PLO 2 Explain meteorological phenomena in terms of advanced physical and dynamic concepts.

PLO 3 Understand and be able to apply advanced numerical methods to solve atmospheric and climate science problems.

Multilingual and Multicultural Literacy Education, MA

PLO 1 Use culturally and linguistically sustaining pedagogy to complete ongoing assessment-instruction cycles to address the literacy needs of students from diverse linguistic and cultural backgrounds;

PLO 2 Implement approaches to literacy education that include the cultural wealth present in the families and communities that schools serve;

PLO 3 Discuss and identify the aspects of history, language, and culture undergirding assumptions, values, and beliefs of competing literacy perspectives;

PLO 4 Create culturally sustaining approaches to literacy leadership that reflect the diversity of experience and knowledge within school communities.

Music, MM

PLO 1 Perform, compose, conduct, or research at a professionally competent level, to be assessed in the final recital or project.

PLO 2 Have an increased breadth of knowledge and skills beyond the undergraduate level in the foundational areas of music theory and history and in other areas related to their music concentration, assessed with final projects in 201, 202, 203 and the WCE for music theory and history.

PLO 3 Identify and use standard digital and paper research tools in music and produce a comprehensive bibliography that shows their ability to utilize standard scholarly tools relevant to their concentration area according to standards set in a research and bibliographic rubric, to be assessed in final projects for 200 and WCE.

PLO 4 Produce an independent creative or scholarly product that demonstrates technical proficiency in their concentration area and effective artistic and intellectual judgments, assessed in final projects for 203, 201, 200, 202, WCE, and in-class participation.

Music Education, MA

PLO 1 Perform, compose, conduct, or research at a professionally competent level, to be assessed in the final recital or project.

PLO 2 Have an increased breadth of knowledge and skills beyond the undergraduate level in the foundational areas of music theory and history and in other areas related to their music concentration.

PLO 3 Identify and use standard digital and paper research tools in music and produce a comprehensive bibliography that shows their ability to utilize standard scholarly tools relevant to their concentration area according to standards set in a research and bibliographic rubric.

PLO 4 Produce an independent creative or scholarly product that demonstrates technical proficiency in their concentration area and effective artistic and intellectual judgments.

N

Nursing, MS (Concentration in Family Nurse Practitioner)

- PLO 1** Apply critical thinking and ethical decision-making including the use of the nursing and research processes.
- PLO 2** Provide theory and research-based culturally competent, safe therapeutic nursing interventions for clients in advanced nursing practice.
- PLO 3** Employ advanced interpersonal skills in professional relationships with clients, families/caregivers, and multidisciplinary health care team members.
- PLO 4** Support health promotion and disease prevention activities in developing and monitoring holistic plans of care for well and at-risk clients, considering access, quality and cost.
- PLO 5** Demonstrate the collaborative and leadership skills required in advanced nursing practice within a multidisciplinary and multicultural (community) health care context.
- PLO 6** Plan, implement, and evaluate advanced nursing practice that promotes and preserves health and healthy lifestyles of individual clients and aggregates.
- PLO 7** Plan, implement, and evaluate advanced therapeutic nursing practice in a rapidly changing, multicultural health care environment.
- PLO 8** Implement care management, including but not limited to case management, resource management, advocacy, and outcome evaluation.
- PLO 9** Employ information technology in advanced nursing practice to evaluate and improve health care delivery and outcomes.
- PLO 10** Actualize the advanced nursing practice role by incorporating professional standards, ethical guidelines, legal mandates, and professional activities.

Nursing Practice, DNP (Doctor of Nursing Practice Program)

- PLO 1** Provide safe, effective, and efficient care within the scope of advanced nursing practice.
- PLO 2** Develop effective strategies to ensure the safety of patients and populations.
- PLO 3** Critically analyze literature and develop best practices.
- PLO 4** Translate research into clinical practice.
- PLO 5** Measure patient outcomes.
- PLO 6** Design, implement, and evaluate quality improvement measures.
- PLO 7** Analyze the cost-effectiveness of practice initiatives.
- PLO 8** Evaluate information systems and patient care technology.
- PLO 9** Influence healthcare policy, educate others about health disparities, and advocate for social justice.
- PLO 10** Demonstrate leadership skills to ensure patient outcomes, enhance communication, and create change in healthcare.

Nutritional Science, MS

- PLO 1** To demonstrate advanced competency in professional writing and oral communication of the essential theories, scientific applications, and/or ethical considerations related to the profession.
- PLO 2** To identify and articulate social and cultural issues related to nutrition/packaging for various populations.
- PLO 3** To analyze and critique published research, and design and conduct research studies using the scientific method.

O

Occupational Therapy, MS

- PLO 1** Be educated as a generalist with a broad exposure to the delivery models and systems used in settings where occupational therapy is currently practiced and where it is emerging as a service.
- PLO 2** Achieve entry level competence.
- PLO 3** Articulate and apply occupational therapy theory, models of practice, clinical reasoning to evidence-based evaluations and interventions to achieve expected outcomes.
- PLO 4** Uphold the ethical standards, values, and attitudes of the occupational therapy profession.

- PLO 5** Be a competent and critical consumer of research and knowledge that supports practice.
- PLO 6** Understand and value the occupational core of the profession.
- PLO 7** Identify the social, political, economic and cultural issues in a diverse society that impact the ability of individuals, communities and populations (clients) to participate in meaningful occupations.
- PLO 8** Advocate for individuals, communities and populations (clients) and actively promote occupational therapy.
- PLO 9** Demonstrate professional and leadership behaviors.
- PLO 10** Be prepared to make a positive impact on occupational pursuits for the health and well-being of society.
- PLO 11** Be self-directed, life-long learners.

Occupational Therapy Doctorate, OTD

- PLO 1** Achieve entry-level competence as a generalist with a broad exposure to the delivery models and systems used in settings where occupational therapy is currently practiced and where it is emerging as a service;
- PLO 2** Understand, value and uphold the occupational core of the profession including the ethical standards, attitudes, and professional behaviors;
- PLO 3** Articulate and apply occupational therapy theory, models of practice, clinical reasoning to evidence-based evaluations and interventions to achieve expected outcomes;
- PLO 4** Be a competent and critical consumer of research and knowledge that supports practice; design, implement and present a scholarly project that will contribute to the professional body of knowledge;
- PLO 5** Identify the social, political, economic and cultural issues in a diverse society that impact the ability of individuals, communities and populations (clients) to participate in meaningful; occupations; create opportunities for occupational engagement for individuals, communities, or populations;
- PLO 6** Advocate for individuals, communities, and populations (clients) and actively promote occupational therapy; and,
- PLO 7** Demonstrate professional leadership skills to be prepared to make a positive impact on occupational pursuits for the health and well-being of society.

P

Philosophy, MA

- PLO 1** Demonstrate **advanced levels** of written and oral communication in philosophical argument as addressed to audiences of both specialists and non-specialists in the field.
- PLO 2** Demonstrate a **professional-level ability** to formulate a valid research question in a field of philosophical inquiry and address that research question in an article-length essay that includes evidence from both primary and secondary sources.
- PLO 3** Demonstrate **advanced knowledge** of core areas and methods of the global history of philosophy, including majors figures, ideas, and philosophical traditions.
- PLO 4** Demonstrate **advanced knowledge** of major ethical and aesthetic theories.
- PLO 5** Demonstrate a **professional-level ability** to offer philosophically rigorous argumentation on behalf of ethical and/or aesthetic choices.
- PLO 6** Demonstrate an **advanced understanding** of influential philosophical conceptions of the nature of reality, knowledge, language, and the human mind.
- PLO 7** Demonstrate an **advanced understanding** of influential philosophical conceptions of the nature of logic and reasoning *or* an ability to solve philosophical problems by using the tools of logical reasoning and formal languages.
- PLO 8** Demonstrate an **advanced understanding** of the ways in which culture, race, ethnicity, gender, economic class, sexual orientation, ability or disability, and national membership influence perceptions about the nature of value, practical reason, reality, knowledge, language, *or* the human mind.
- PLO 9** Students completing an MA in Philosophy will be able to effectively teach a range of courses at the undergraduate level **in diverse formats (in-person, online synchronous and online asynchronous).**

Physics, MS

PLO 1 Students will be able to engage in experiential projects involving the formulation of research questions and the design and execution of empirical studies, computational simulations, and/or theoretical models aimed at addressing these questions.

PLO 2 Students will demonstrate a deep understanding of physics concepts by applying those concepts to research in physics.

PLO 3 Students will be able to construct meaningful conclusions from data sets relevant to research activities by applying laboratory, modeling, computational, and/or data analysis skills.

PLO 4 Students will be able to communicate scientific content and thinking by generating a professionally formatted graduate thesis or project report and by orally presenting their work to an audience of professional physicists. Students will also demonstrate productive collaboration with peers in classroom and/or research contexts.

PLO 5 Students will be able to communicate to others a sophisticated understanding of how work in physics influences technology, society, and culture.

Psychology, Industrial/Organizational Psychology Concentration, MS

PLO 1A Learn core psychological competencies including: History of I/O Psychology and its integration into the broader discipline and Related fields of psychology (i.e. social psychology, personality psychology, psychometrics, motivation, learning theory).

PLO 1B Students will learn core I/O competencies including: Ethical, legal and professional issues; Measurement of individual differences; Criterion theory and development; Job and task analysis; Employee selection; Performance appraisal and feedback; Training and development; Work motivation; Attitude theory; Organization theory; and Organizational development.

PLO 1C Learn data collection and analysis skills including: Research methods (i.e. methods, procedures, and techniques used to conduct empirical research in I/O psychology) and Statistical methods (i.e. techniques used in the analysis of data generated by empirical research).

PLO 2 Perform professional activities related to I/O Psychology including, but not limited to: Administering employee surveys; Evaluating organizational interventions; Conducting job analyses; Creating selection tests; and Developing performance management systems.

Psychology, Research and Experimental Psychology Concentration, MA

PLO 1 Demonstrate advanced knowledge of the major theoretical perspectives and research methods across areas of experimental psychology (i.e., Developmental, Social, Cognitive, and Physiological).

PLO 2 Possess an advanced level of competence in research methods, statistical techniques, and technical writing skills. Students completing the MA in Psychology program are required to complete a thesis. The thesis will demonstrate: creative problem-solving in the design, implementation of empirical research; project management skills in the implementation of empirical research; advanced competency in the statistical analysis and interpretation of empirical research findings; communication (oral and written) of research findings at a professional level.

PLO 3 Achieve career enhancement through placement in a doctoral program or acceptance of a position requiring a master's in psychology in the public or private sector.

Public Administration, MPA

PLO 1 Lead and manage in public governance

PLO 1A Apply the project management approach to public management models.

PLO 1B Manage projects.

PLO 1B Understand the relationships between public policy, whether proposed or enacted, and leadership and management in implementation.

PLO 2 Participate in and contribute to the public policy process

PLO 2A Apply techniques for program evaluation and policy analysis.

PLO 2B Describe and execute the policy making process, including defining the problem, setting the agenda, formulate policy, implement policy and evaluate policy.

PLO 2C Prepare a budget reflecting policy priorities.

PLO 3 Analyze, synthesize, think critically, solve problems and make decisions

PLO 3A Employ analytical tools for collecting, analyzing, presenting and interpreting data, including appropriate statistical concepts and techniques.

PLO 3B Identify and employ alternative sources of funding, including grants, taxes and fees.

PLO 3C Understand and apply the legal context of public affairs, administration and policy.

PLO 4 Articulate and apply a public service perspective

PLO 4A Behave ethically and with integrity: tell the truth, keep confidences, admit mistakes.

PLO 4B Understand and apply criteria appropriate to public affairs, administration and policy.

PLO 4C Maintain privacy and security of documents and understand Big Data challenges.

PLO 5 Communicate and interact productively with a diverse and changing workforce and citizenry

PLO 5A Communicate effectively in writing: prepares clear, concise and well-organized written materials tailored to the audience's level of expertise and needs.

PLO 5B Communicate effectively in speech: presents oral information accurately, clearly, concisely persuasively tailored level of expertise and needs.

PLO 5C Work productively in teams.

Public Health, MPH

PLO 1 Apply quantitative and qualitative forms of analysis to emerging trends, priorities, and assets in order to predict future individual, community, and population health needs and opportunities, taking into account public health's historical foundations and current evidence base, and to communicate the implications for health promotion policy and practice.

PLO 2 Apply concepts and theories of behavior, education, systems, complexity, communication, and ecological frameworks to design, plan, implement, evaluate, and disseminate health education and health promotion interventions and policy in accordance with public health objectives, community needs, and organizational and community goals.

PLO 3 Provide technical assistance and act as a health education resource across a broad range of settings to promote community health through community building and organizing with identified stakeholders, including community members, consumers, health practitioners and health care providers, policy and decision-makers.

PLO 4 Apply principles and skills of leadership and management to human, fiscal, capital, and social resources when administering health education strategies, interventions, and programs.

PLO 5 Apply the principles and skills of effective inclusive and multicultural practice when engaging with individuals, groups, organizations, and communities from diverse cultures and backgrounds.

PLO 6 Apply policy analysis methods and develop an advocacy strategy to advance public health policy.

PLO 7 Advance public health practice and the health education profession by drawing upon historical and contemporary contributions of the field and applying principles of social justice.

PLO 8 Adhere to standards for ethical practice and research based on their personal values and mission statements, institutional mandates, and the Code of Ethics for the Health Education Profession, in order to apply them to fields of public health and community health education.

Q

Quantum Technology, MS

PLO 1 Demonstrate deep knowledge of basic concepts in quantum theory required for quantum information science by applying them to research and coursework in quantum technologies.

PLO 2 Formulate research questions related to quantum technologies and design experiments, computational algorithms, and/or analytic models to address those questions.

PLO 3 Demonstrate knowledge of the applications of quantum technology to solve problems in computing, sensing, and communication.

PLO 4 Communicate scientific content and thinking effectively as evidenced by productive collaboration with peers, well-reasoned professionally formatted written research papers and visual and oral presentations.

PLO 5 Communicate the impact of quantum technological solutions in a global, economic, environmental, societal, and ethical context, including political, health, safety, manufacturability, and sustainability.

PLO 6 Articulate the interdisciplinary nature of quantum technology, including the importance of diverse skill sets in the successful commercialization of quantum technology.

S

Science Education, MS

PLO 1A Synthesize primary literature from science education research and apply how it fits to their project.

PLO 1B Demonstrate knowledge of at least two areas (e.g. inquiry based instruction, learning theory, assessment) that are related to, or supportive of research for their project.

PLO 2A Present science and science education content in the form of graduate seminars or in the oral defense of their project (also known as the culminating experience).

PLO 2B Organize and write the results of their project in a manner consistent with standards in professional science education publications.

Social Work, MSW

PLO 1 Demonstrate Ethical and Professional Behavior.

PLO 2 Engage Diversity and Difference in Practice.

PLO 3 Advance Human Rights and Social, Economic, and Environmental Justice.

PLO 4 Engage In Practice-informed Research and Research-informed Practice.

PLO 5 Engage in Policy Practice.

PLO 6 Engage with Individuals, Families, Groups, Organizations, and Communities.

PLO 7 Assess Individuals, Families, Groups, Organizations, and Communities.

PLO 8 Intervene with Individuals, Families, Groups, Organizations, and Communities.

PLO 9 Evaluate Practice with Individuals, Families, Groups, Organizations, and Communities.

Software Engineering, MS

PLO 1 Demonstrate an understanding of advanced knowledge of the practice of software engineering, from vision to analysis, design, validation and deployment.

PLO 2 Tackle complex engineering problems and tasks, using contemporary engineering principles, methodologies and tools.

PLO 3 Demonstrate leadership and the ability to participate in teamwork in an environment with different disciplines of engineering, science and business.

PLO 4 Be aware of ethical, economic and environmental implications of their work, as appropriate.

PLO 5 Advance successfully in the engineering profession, and sustain a process of life-long learning in engineering or other professional areas.

PLO 6 Communicate effectively, in both oral and written forms.

Spanish, MA

PLO 1 Ability to understand the historical development of the Spanish language in its external (history, culture) and internal development (morphology, syntax and semantics).

PLO 2 Knowledge of and familiarity with the linguistic variation of Spanish and its main dialects, including phonology, geographical variation, social dialects, and registers.

PLO 3 Knowledge of the literatures and cultures of the Spanish-speaking world (Spain, Spanish America and the Hispanic U.S.) and relevant literary and cultural criticism.

PLO 4 Ability to write and present orally in a scholarly fashion.

Special Education, MA

- PLO 1** Assess and identify the educational needs and strengths of students with disabilities from diverse socioeconomic, cultural and linguistic backgrounds.
- PLO 2** Critically evaluate pedagogy, curricula and instructional materials grounded in quality indicators of evidence-based practices for students with disabilities.
- PLO 3** Plan, design, implement, and monitor linguistically and culturally appropriate instruction that meets the unique needs of students with disabilities.
- PLO 4** Apply knowledge of the purpose, characteristics, and appropriate use of different types of assessments used for special education eligibility, placement, and service selection.
- PLO 5** Utilize research-based knowledge and theoretical, conceptual and evidence-based practices related to individuals with disabilities to improve services and instruction in the field.

Speech Language Pathology, MS

- PLO 1** Explain basic human mechanisms and processes including anatomy, physiology, and neurobiology of speech, language, hearing, and swallowing.
- PLO 2** Distinguish between characteristics of human communication differences and disorders across the lifespan.
- PLO 3** Describe common clinical approaches, evidence-based practices and interprofessional collaboration in speech-language pathology and audiology.
- PLO 4** Articulate essential elements of equitable and inclusive educational and healthcare services.
- PLO 5** Apply knowledge, skills, and dispositions to ethical and culturally responsive practice with diverse populations.

Statistics, MS

- PLO 1** Carry out appropriate inferential procedures based on the mathematical theory of statistics.
- PLO 2** Use technology and statistical software to perform advanced statistical analyses.
- PLO 3** Communicate and present specialized statistical concepts clearly in oral, graphical, and written forms using appropriate technical terms in a way that is accessible to a general audience.

T

Taxation, MS

- PLO 1** Evaluate tax compliance and planning issues within the context of our global economy.
- PLO 2** Prepare tax research reports based on primary authority.
- PLO 3** Demonstrate effective written and oral communication skills for tax compliance and planning.
- PLO 4** Explain policy principles for existing tax law and proposals for change.
- PLO 5** Evaluate appropriate approaches to the ethical issues of tax compliance and planning.
- PLO 6** Develop skills for effective tax practice including keeping current, interacting with others, and career advancement.

Teaching, MAT

- PLO 1** Plan for collaborative relationships with students, leaders, families, organizations, advocates, and / or other community members that center their diverse assets, interests, needs, and expertise in ways that augment students' educational experiences.
- PLO 2** Critically examine, design, and implement authentic, asset-based learning environments, curricula, and pedagogical approaches that affirm and cultivate students' diverse cultural, linguistic, cognitive, and socioeconomic resources as disciplinarily relevant instructional and pedagogical resources.
- PLO 3** Critically examine, design, and implement ongoing feedback-based approaches to assessment that center formative guidance during the learning process as opportunities for students to revise, expand, and grow as learners.
- PLO 4** Analyze and critique important intersecting aspects of history, ideology, policy, power, race, class, language, and other facets of culture underlying societal and one's personal values, biases, and practices within education.
- PLO 5** Design and apply classroom inquiry cycles to address a problem of practice through culturally sustaining, holistic pedagogical practices and critical self-reflection.

Teaching, Critical Bilingual Education (Spanish) Concentration, MAT

PLO 1 Plan for collaborative relationships with leaders, families, organizations, advocates, and other community members that center their diverse assets, interests, needs, expertise, and linguistic skills in ways that augment students' educational experiences and agency in bilingual communities.

PLO 2 Critically examine, design, and implement authentic, asset-based bilingual curricula and bilingual instructional methods that affirm and cultivate students' diverse cultural, linguistic, cognitive, and socioeconomic resources as disciplinarily relevant instructional and pedagogical resources.

PLO 3 Critically examine, design, and implement ongoing feedback based approaches to assessment that have a linguistic lens and center formative guidance during the learning process as opportunities for students to revise, expand, and grow as bilingual learners.

PLO Analyze and critique important intersecting aspects of history, ideology, policy, power, race, class, language, and other facets of culture underlying societal and one's personal values, biases, bilingual identity, and practices within bilingual education.

PLO 5 Design and apply classroom inquiry cycles to address a problem of bilingual practice through culturally and linguistically sustaining, holistic pedagogical practices and critical self-reflection.

PLO 6 Analyze and critique language in education policies at multiple levels, from federal, to state, to local levels, identify areas of personal agency, and be able to determine equitable courses of educational action for bilingual learners.

Teaching English to Speakers of Other Languages (TESOL), MA (Not Accepting Students)

PLO 1A Analyze language as a system consisting of phonology, morphology, syntax, semantics, lexis, pragmatics, and discourse and articulate the relationships between the various intrasentential levels and features of English structure.

PLO 1B Correlate the knowledge and analytical skills in objective 1A with the four skills of reading, writing, listening, and speaking with sufficient precision to teach and assess proficiency in English as a non-native language.

PLO 2A Demonstrate an understanding of the role of pragmatic knowledge and knowledge of text structure in the comprehension, production, and acquisition of a second language.

PLO 2B Demonstrate an understanding of the intersection between culture, language, language learning and teaching, and language use with particular reference to English as a global language.

PLO 2C Apply theoretical knowledge of second language acquisition in second language learning/acquisition contexts.

PLO 3A Identify the instructional strategies that go with the established teaching methods and apply them to various language learning and teaching situations.

PLO 3B Critically evaluate the teaching of actual ESL classes with regard to teaching strategies and activities and with regard to goals 1 and 2.

PLO 3C Demonstrate an understanding of the theory and practice of needs analysis, curriculum design, and assessment techniques.

PLO 3D Develop ESL curriculum for diverse target groups, design supplementary materials for use with particular instructional strategies, and develop language tests and assessment instruments by synthesizing the objectives of goals 1 and 2 and the teaching strategies in objective 3A.

PLO 4A Critically examine concepts such as race, ethnicity, identity, and culture and their relationship to language teaching and learning in the context of a globalized world.

PLO 4B Design syllabi that create classroom and program environments that foster global cultural consciousness.

PLO 5A Complete a one-semester supervised practicum in which they plan lessons and teach English to an actual ESL class.

PLO 5B Carry out independent research.

PLO 5C Effectively write and present for professional audiences.

Transportation Management, MS

PLO 1 Transportation Systems and Society - Craft management decisions that integrate knowledge of multi-modal transportation, social, and environmental systems.

PLO 1A Evaluate transportation proposals to identify impacts on transportation system performance objectives (e.g. accessibility and safety).

PLO 1B Evaluate transportation proposals to identify impacts on broad policy goals (e.g. equity, economic competitiveness, and environmental sustainability).

PLO 1C Analyze transportation management proposals to identify the relevant legislative and administrative structures that guide the decision.

PLO 2 Innovation - Develop innovative solutions for transportation management challenges.

PLO 2A Develop solutions to transportation management challenges that are informed by global best practices and emerging transportation technologies

PLO 3 Leadership - Develop high-impact leadership styles and competencies (traits, skills, behaviors).

PLO 3A Identify effective strategies to improve leadership competencies.

PLO 4 Communications - Communicate effectively with a diverse workforce and citizenry.

PLO 4A Prepare written materials that are clear, technically proficient, and tailored to diverse audiences' needs and level of expertise.

PLO 4B Deliver oral presentations that are clear, engaging, and tailored to diverse audiences' needs and level of expertise.

PLO 5 Analytics - Identify and evaluate transportation management issues using appropriate data and analytical methods.

PLO 5A Collect, analyze, and synthesize information from multiple sources using appropriate data and analytical methods.

U

Urban Planning, MUP

PLO 1 Conceptualize planning problems from complex, real-world situations so that the problems are meaningful to clients, and are research-worthy.

PLO 2 Communicate effectively.

PLO 3 Work effectively as team members and leaders of planning teams, and to apply an understanding of interpersonal and group dynamics to assure effective group action.

PLO 4 Analyze and synthesize planning knowledge and apply it to address actual planning problems.

PLO 5 Develop planning strategies to advance community priorities through collaborative engagement with stakeholders, and do so in a manner that deliberately incorporates multicultural and historical perspectives.

Service Departments and Services Program Learning Goals

Division of Student Affairs

Campus Life

- Associated Students, SJSU
- Gender Equity Resource Center
- MOSAIC Cross Cultural Center
- Student Conduct & Ethical Development
- PRIDE Center
- Student Involvement
- Student Union, Inc.
- University Housing Services

Health, Wellness & Student Services

- Accessible Education Center
- Career Center
- International Student and Scholar Services
- Veterans Resource Center
- SJSU Cares
- Student Wellness Center
 - Wellness & Health Promotion
 - Counseling & Psychological Services
 - Health Services
- UndocuSpartan Student Resource Center

Student Success

- Asian Pacific Islander Student Empowerment (CAPISE)
- Black Leadership & Opportunity Center (BLOC)
- Chicana/Latina Student Success Center (Centro)
- Educational Programs & Academic Support
- Educational Opportunity Program
- Guardian Scholars
- Native American/ Indigenous Student Success Center (NAISSC)
- New Student & Family Programs
- Student Ombudsperson

- TRIO Programs (Aspire/McNair)

Division of Academic Affairs

Enrollment Management

- Undergraduate Admissions
- Student Outreach and Recruitment
- Enrollment Management Technical Implementation and Communication
- Financial Aid and Scholarships Office
- Graduate Admissions and Program Evaluations
- Graduate Enrollment Management
- Office of the Registrar
- Testing Office

Course Note Abbreviations

The following course abbreviation codes are used throughout the academic catalog to identify the undergraduate or graduate graduation requirements.

Area	Description
A1	Area A1: Oral Communication
A2	Area A2: Written Communication IA
A3	Area A3: Critical Thinking and Writing
B1	Area B1: Physical Science
B1+3	Areas B1 + B3: Physical Science & Laboratory Science
B2	Area B2: Life Science
B2+3	Areas B2 + B3: Life Science & Laboratory Science
B3	Area B3: Laboratory Science
B4	Area B4: Mathematics/Quantitative Reasoning
C1	Area C1: Arts
C2	Area C2: Humanities
D	Area D: Social Sciences (formerly D1 Human Behavior, D2 Comparative Systems, D3 Social Issues)
E	Area E: Human Understanding & Development
F	Area F: Ethnic Studies
US1	Area US1: American History
US23	Areas US2 and US3: US Constitution & California Government
US3	Area US3: California Government Only
US123	Areas US1, US2, and US3 American History, US Constitution & California Government
R	Area R: Earth, Environment, and Sustainability
S	Area S: Self, Society & Equality in the U.S.
V	Area V: Cultures and Global Understanding

GWAR Graduation Writing Assessment Requirement

WID Writing in the Disciplines

Archived Catalog Abbreviations

In archived academic catalogs, you may see references to abbreviation codes when a course fulfills multiple General Education Requirements areas and/or Undergraduate University Graduation Requirements. In some cases, the area may not be met until the entire course sequence is completed.

Code	GE Areas
D1	Human Behavior
D2	Comparative Systems
D3	Social Issues
M1	A1+ C2 + US123
M2	A2 + C2 (must satisfy sequence)
M3	A3 + D
M4	C1 + D
M5	C2 + D + US123 (must satisfy sequence)
M6	D + US123 (must satisfy sequence)
M7	D + US123 (must satisfy sequence)
M8	C1 + C2 (must satisfy sequence)
M9	A3 or C2 (must satisfy sequence)
M10	A2 + D (must satisfy sequence)
M11	D + US23 (must satisfy sequence)
M12	D + US1 (must satisfy sequence)
M13	A3 + C2 + US123 (must satisfy sequence)
M14	A1 + D (must satisfy sequence)
M15	A2 + D (must satisfy sequence)
Z	Area Z: Written Communication II (GWAR)

General Education Requirements

General Education Requirements

A university brings together many separate areas of learning, yet it is more than just a collection of specialized disciplines. SJSU's general education program **establishes a strong foundation of versatile skills, fosters curiosity about the world, and prepares students to engage and contribute responsibly and cooperatively in a multicultural, information-rich society.** General education classes integrate areas of study and encourage progressively more complex and creative analysis, expression, and problem solving. The program aims to equip students with the knowledge, skills, and values they need for a lifetime of intellectual and personal growth. Review the learning goals and outcomes, policies, academic advisement information, and previous requirements.

4. Mathematics/Quantitative Reasoning

HumanitiesHumanities

General Education Requirements

General Education Core - Lower Division Requirements

Students must complete 39 units of Core GE courses. Courses that must be completed as a part of a sequence or are designed for specific majors only are identified in parentheses next to the course. Students may satisfy an Intensive GE sequence in science, math, or music.

A. English Language Communication and Critical Thinking

9 units

Complete one course each in 1. Oral Communication, 2. Written Communication I, and 3. Critical Thinking and Writing.

Minimum Grade: A minimum grade of "C-" or better (per the CSU General Education Breadth Requirements).

1. Oral Communication

Oral Communication courses cultivate an understanding of the social, psychological, political, and practical significance of communication, with special emphasis on the roles of public communication in a free society.

- CCS 74 - Public Address 3 *unit(s)*
- COMM 20 - Public Speaking 3 *unit(s)*
- COMM 20EL - Public Speaking for English Language Learners 3 *unit(s)*
- COMM 40 - Argumentation and Advocacy 3 *unit(s)*
- HUM 10 - Honors Global Oral and Rhetorical Cultures 3 *unit(s)*

2. Written Communication I

Written Communication I courses cultivate an understanding of the writing process and the goals, dynamics, and genres of written communication, with special attention to the nature of writing at the university. **First year students are expected to complete this requirement within their first two semesters at SJSU.**

- ENGL 1A - First Year Writing 3 *unit(s)*
- ENGL 1AS - First-Year Writing: Stretch English II 3 *unit(s)*

3. Critical Thinking and Writing

Critical Thinking and Writing courses develop students' understanding of the relationship of language to logic, develop students' abilities to research and analyze important topics, and to construct their own arguments on issues that generate meaningful public debate and deliberation.

- ANTH 13 - Archaeology 3 *unit(s)*
- COMM 41 - Critical Decision Making 3 *unit(s)*
- COMM 45 - Media and Culture 3 *unit(s)*
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)*
- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)*
- HIST 50 - Historical Process: Understanding Historical Reasoning 3 *unit(s)*
- HUM 11 - Honors Critical Thinking across Global Cultures 3 *unit(s)*
- HUM 80 - Reading the World 3 *unit(s)*
- LING 21 - Critical Thinking and Language 3 *unit(s)*
- LING 24 - Language Variation in Space, Time, & Culture 3 *unit(s)*
- PHIL 57 - Logic and Critical Reasoning 3 *unit(s)*
- POLS 20 - Controversial Legal Issues 3 *unit(s)*

B. Scientific Inquiry and Quantitative Reasoning

9 units

Complete at least one course in 1. Physical Science, 2. Life Science, and 4. Mathematics/Quantitative Reasoning. At least one lab course (L) must be completed.

Physical, Life, and Laboratory Science courses (B1-3) develop students' knowledge of scientific theories, concepts, and data about living and non-living systems, as well as potential limits of scientific endeavors and the value systems and ethics associated with scientific inquiry.

1. Physical Science

Intensive Science: Students who have completed the Intensive Science courses with a "**C- or better**", will be allowed to use these courses to fulfill the requirement in B1/B3 or B2/B3. Students may petition to have (1) grades below C- (very rarely approved), or (2) other Intensive Science courses not on the list approved as intensive science courses. Additionally, the following packages of courses, all completed with "C- or better", will satisfy Areas B1, B2, and B3: Two courses from PHYS 50, PHYS 51, or PHYS 52, and CHEM 1A; or PHYS 2A and PHYS 2B and CHEM 1A; or CHEM 1A and CHEM 1B, plus a physics course. See details on the Office of Undergraduate Education's Student Petitions website.

- ASTR 10 - Descriptive Astronomy 3 *unit(s)*

- CHEM 1A - General Chemistry 5 *unit(s)* (L) (*Intensive Science*)
- CHEM 1B - General Chemistry 5 *unit(s)* (L) (*Intensive Science*)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (L)
- ENGR 5 - Science of High Technology 3 *unit(s)*
- GEOG 1 - Physical Geography 3 *unit(s)*
- GEOL 1 - General Geology 4 *unit(s)* (L)
- GEOL 3 - Planet Earth 3 *unit(s)*
- GEOL 6 - Geology of California 3 *unit(s)*
- GEOL 7 - Earth, Time and Life 4 *unit(s)* (L)
- GEOL 9 - Earth Disasters 4 *unit(s)* (L)
- METR 10 - Weather and Climate 3 *unit(s)*
- METR 12 - Global Warming: Science and Solutions 3 *unit(s)*
- NUFS 1A - Physical Science of Food 3 *unit(s)*
- PHYS 1 - Elementary Physics 3 *unit(s)*
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (L) (*Intensive Science*)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (L) (*Intensive Science*)
- PHYS 23 - Animation Physics 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (L) (*Intensive Science*)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (L) (*Intensive Science*)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (L) (*Intensive Science*)

2. Life Science

Intensive Science: Students who have completed the Intensive Science courses **with a "C- or better"** will be allowed to use these courses to fulfill the requirement in B1/B3 or B2/B3. Students may petition to have (1) grades below C- (very rarely approved), or (2) other Intensive Science courses not on the list approved as intensive science courses. Additionally, the following packages of courses, all completed with "C- or better", will satisfy Areas B1, B2, and B3: Two courses from PHYS 50, PHYS 51, or PHYS 52, and CHEM 1A; or PHYS 2A and PHYS 2B and CHEM 1A; or CHEM 1A and CHEM 1B, plus a physics course. See details on the Office of Undergraduate Education's Student Petitions website.

- ANTH 12 - Introduction to Human Evolution 3 *unit(s)*
- BIOL 10 - The Living World 3 *unit(s)*
- BIOL 20 - Ecological Biology 3 *unit(s)* (L)
- BIOL 21 - Human Biology 3 *unit(s)* (L)
- BIOL 30 - Principles of Biology I 4 *unit(s)* (L) (*Intensive Science*)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (L) (*Intensive Science*)
- BIOL 65 - Human Anatomy 4 *unit(s)* (L) (*Intensive Science*)
- BIOL 65O - Human Anatomy 4 *unit(s)* (L) (*Intensive Science*)
- BIOL 66 - Human Physiology 5 *unit(s)* (L) (*Intensive Science*)
- ENV5 10 - Life on a Changing Planet 3 *unit(s)*
- GEOL 8 - The Age of the Dinosaurs 3 *unit(s)*
- GLST 1B - Introduction to Global Studies 3 *unit(s)*
- MICR 20 - General Bacteriology 5 *unit(s)* (L) (*Intensive Science*)
- NUFS 16 - Science, Physiology, and Nutrition 3 *unit(s)*

3. Laboratory

The following courses meet the Lab requirement only.

- BIOL 150 - Field Studies in Natural History 1-2 *unit(s)* (L)
- GEOL 4L - Earth Systems Lab 1 *unit(s)* (L)
- GEOL 150 - Field Studies in Natural History 1-2 *unit(s)* (L)

4. Mathematics/Quantitative Reasoning

Mathematics/Quantitative Reasoning courses develop students' abilities to reason quantitatively, practice computational skills, and explain and apply mathematical and/or quantitative reasoning concepts to solve problems at the college level. **First year students are expected to complete this requirement within their first two semesters at SJSU.**

Minimum Grade: A minimum grade of "C-" or better (per the CSU General Education Breadth Requirements).

Intensive Math: Students who have completed an Intensive Math course with a "C- or better" will be allowed to use these courses to fulfill the requirement in B4: MATH 30, MATH 30X, MATH 31, MATH 31X, MATH 32, MATH 32X, MATH 70, MATH 70X, MATH 71, or MATH 71X.

- CHAD 80 - Quantitative Analysis in Developmental Science 3 *unit(s)*
- CS 22A - Python for Everyone 3 *unit(s)*
- ESM 1 - Mathematical Reasoning 3 *unit(s)*
- ESM 9 - Mathematics and Logic for General Education 3 *unit(s)*
- ESM 10A - Mathematics in Art and Music 3 *unit(s)*
- ESM 10D - Probability, Data Science, Ethics, and You 3 *unit(s)*
- ESM 10P - Mathematics in Politics 3 *unit(s)*
- ESM 15 - Statway: Statistics-Concepts & Methods 3 *unit(s)*
- ESM 18A - College Algebra 3 *unit(s)*
- ESM 19 - Precalculus 5 *unit(s)*
- ESM 26 - Quantitative Reasoning in Linguistic Diversity 3 *unit(s)*
- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)*
- LING 26 - Quantitative Reasoning in Linguistic Diversity 3 *unit(s)*
- MATH 1 - Mathematical Reasoning 3 *unit(s)*
- MATH 10 - Mathematics for General Education 3 *unit(s)*
- MATH 10A - Mathematics in Art and Music 3 *unit(s)*
- MATH 10D - Probability, Data Science, Ethics, and You 3 *unit(s)*
- MATH 10P - Mathematics in Politics 3 *unit(s)*
- MATH 12 - Number Systems 3 *unit(s)*
- MATH 15 - Statway: Statistics-Concepts & Methods 3 *unit(s)*
- MATH 18A - College Algebra 3 *unit(s)*
- MATH 19 - Precalculus 5 *unit(s)*
- MATH 30 - Calculus I 3 *unit(s)* (*Intensive Math*)
- MATH 30X - Calculus I 3 *unit(s)* (*Intensive Math*)
- MATH 31 - Calculus II 4 *unit(s)* (*Intensive Math*)
- MATH 31X - Calculus II 4 *unit(s)* (*Intensive Math*)
- MATH 32 - Calculus III 3 *unit(s)* (*Intensive Math*)
- MATH 32X - Calculus III 3 *unit(s)* (*Intensive Math*)
- MATH 70 - Mathematics for Business 3 *unit(s)* (*Intensive Math*)
- MATH 70X - Mathematics for Business 3 *unit(s)* (*Intensive Math*)

- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (*Intensive Math*)
- MATH 71X - Calculus for Business and Aviation 3 *unit(s)* (*Intensive Math*)
- PH 67 - Introductory Health Statistics 3 *unit(s)*
- PHIL 9 - Mathematics and Logic for General Education 3 *unit(s)*
- SOCI 15 - Statistical Applications in the Social Sciences 3 *unit(s)*
- SOCS 15 - Statistical Applications in the Social Sciences 3 *unit(s)*
- STAT 95 - Elementary Statistics 3 *unit(s)*
- UNVS 15 - Statway: Statistics-Concepts & Methods 3 *unit(s)*

C. Arts and Humanities

9 units

Complete no fewer than 9 semester units, with at least one course in the Arts (C1) and one in the Humanities (C2).

In Arts and Humanities courses, students develop their understanding of the historical and cultural contexts in which works of art and humanistic inquiry are created and interpreted. Courses enable students to participate in social and cultural communities associated with artistic and humanistic endeavors, thus enriching their lives and promoting lifelong appreciation of the humanistic and creative arts.

Intensive Music: Students who have completed the Intensive Music courses MUSC 4A, MUSC 4B and MUSC 12, with a "C or better", will be allowed to use these courses to fulfill the requirements of Area C. Students may petition to have (1) grades below C (very rarely approved), or (2) other Intensive Music courses not on the list approved as intensive music courses. See details on the Office of Undergraduate Education's Student Petitions website.

1. Arts

- AMS 1A - American Cultures to 1877 6 *unit(s)* (*must complete sequence*)
- AMS 12 - Intro to US Popular Culture: Serious Fun! 3 *unit(s)*
- ARTH 15 - Intro to Visual Culture 3 *unit(s)*
- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)*
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)*
- ARTH 70C - Arts of Asia 3 *unit(s)*
- ARTH 72 - Design in Society 3 *unit(s)*
- ASIA 19 - Music in World Cultures 3 *unit(s)*
- ASIA 70C - Arts of Asia 3 *unit(s)*
- CA 95 - Introduction to Queer Arts 3 *unit(s)*
- DANC 10 - Dance Appreciation 3 *unit(s)*
- ENGL 71 - Creative Writing 3 *unit(s)*
- HUM 20 - Honors Global Material Cultures 3 *unit(s)*
- KIN 68 - Visual Representations of Sport in Popular Culture 3 *unit(s)*
- MUSC 4A - Music Theory 4A 2 *unit(s)* (*Intensive Music*)
- MUSC 4B - Musicianship 4B 1 *unit(s)* (*Intensive Music*)
- MUSC 10A - Music Appreciation 3 *unit(s)*
- MUSC 10B - Introduction to Music 3 *unit(s)*
- MUSC 10C - Pop and Rock in the U.S. 3 *unit(s)*
- MUSC 10D - Introduction to Hip Hop 3 *unit(s)*
- MUSC 19 - Music in World Cultures 3 *unit(s)*
- PHIL 66 - Introduction to Aesthetics 3 *unit(s)*

- RTVF 10 - The Art of Film 3 *unit(s)*
- TA 5 - Acting 3 *unit(s)*
- TA 10 - Theatre Appreciation 3 *unit(s)*
- TA 55 - Intro to Design for Theatre 3 *unit(s)*

2. Humanities

- AMS 1B - American Cultures 1877 to Present 6 *unit(s)* (*must complete sequence*)
- AMS 10 - Stories that Make America 3 *unit(s)*
- CHIN 1A - Elementary Chinese 4 *unit(s)*
- CHIN 1B - Elementary Chinese 4 *unit(s)*
- CHIN 25A - Intermediate Chinese 4 *unit(s)*
- CHIN 25B - Intermediate Chinese 4 *unit(s)*
- ENGL 1B - Argument and Analysis 3 *unit(s)*
- ENGL 10 - Great Works of Literature 3 *unit(s)*
- ENGL 20 - The Graphic Novel 3 *unit(s)*
- ENGL 21 - Mystery and Detective Fiction 3 *unit(s)*
- ENGL 22 - Fantasy and Science Fiction 3 *unit(s)*
- ENGL 30 - Literature and the Environment 3 *unit(s)*
- ENGL 40 - Contemporary World Fiction 3 *unit(s)*
- ENGL 78 - Introduction to Shakespeare's Drama 3 *unit(s)*
- FREN 1A - Elementary French 4 *unit(s)*
- FREN 1B - Elementary French 4 *unit(s)*
- FREN 25A - Intermediate French: Reading 4 *unit(s)*
- FREN 25B - Intermediate French: Writing 4 *unit(s)*
- GERM 1A - Elementary German 4 *unit(s)*
- GERM 1B - Elementary German 4 *unit(s)*
- GERM 25A - Intermediate German 4 *unit(s)*
- GERM 25B - Intermediate German 4 *unit(s)*
- HEBR 1A - Elementary Hebrew 4 *unit(s)*
- HEBR 1B - Elementary Hebrew 4 *unit(s)*
- HUM 21 - Honors Reading Difference across Global Cultures 3 *unit(s)*
- HUM 90 - Bible History and Literature 3 *unit(s)*
- ITAL 1A - Elementary Italian 4 *unit(s)*
- ITAL 1B - Elementary Italian 4 *unit(s)*
- JPN 1A - Elementary Japanese 4 *unit(s)*
- JPN 1B - Elementary Japanese 4 *unit(s)*
- JPN 25A - Intermediate Japanese 4 *unit(s)*
- JPN 25B - Intermediate Japanese 4 *unit(s)*
- JWSS 1A - Elementary Hebrew 4 *unit(s)*
- JWSS 1B - Elementary Hebrew 4 *unit(s)*
- JWSS 90 - Bible History and Literature 3 *unit(s)*
- LSTP 10 - Chronicles of Education 3 *unit(s)*
- MDES 90 - Bible History and Literature 3 *unit(s)*
- MUSC 12 - Medieval and Renaissance Music 3 *unit(s)* (*Intensive Music*)
- PHIL 10 - Introduction to Philosophy 3 *unit(s)*
- PHIL 61 - Moral Issues 3 *unit(s)*

- PHIL 70A - Ancient Philosophy 3 *unit(s)*
- PHIL 70B - Early Modern Philosophy 3 *unit(s)*
- POLS 3 - Introduction to Political Thought 3 *unit(s)*
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)*
- PORT 1A - Elementary Portuguese I 4 *unit(s)*
- PORT 1B - Elementary Portuguese II 4 *unit(s)*
- RELS 1A - Elementary Hebrew 4 *unit(s)*
- RELS 1B - Elementary Hebrew 4 *unit(s)*
- RELS 70 - Gods, Guns, Gurus, Grails-World Religion 3 *unit(s)*
- RELS 90 - Bible History and Literature 3 *unit(s)*
- RUSS 1A - Elementary Russian I 4 *unit(s)*
- RUSS 1B - Elementary Russian II 4 *unit(s)*
- SPAN 1A - Elementary Spanish 4 *unit(s)*
- SPAN 1B - Elementary Spanish 4 *unit(s)*
- SPAN 20A - Spanish for Heritage Speakers I 4 *unit(s)*
- SPAN 20B - Spanish for Heritage Speakers II 4 *unit(s)*
- SPAN 25A - Intermediate Spanish 4 *unit(s)*
- SPAN 25B - Intermediate Spanish 4 *unit(s)*
- TA 13 - Great Comedies for Theatre 3 *unit(s)*
- TAG 1A - Elementary Tagalog I 4 *unit(s)*
- TAG 1B - Elementary Tagalog II 4 *unit(s)*
- VIET 1A - Elementary Vietnamese 4 *unit(s)*
- VIET 1B - Elementary Vietnamese 4 *unit(s)*

D. Social Sciences

6 units

Complete no fewer than 6 units in Area D. Courses in the Social Sciences (Area D and Area S) must be completed in at least two different disciplines (for example, ANTH and POLS). Students who take two lower-division Area D courses in the same discipline must take an Area S upper-division GE course in a different discipline.

To earn American Institutions (US123) credit, students may complete two D courses that incorporate the American Institutions content, as noted below. Some courses may require completion of a 2-semester sequence in order to receive American Institutions credit (AFAM 2A/AFAM 2B, AAS 33A/AAS 33B, CCS 10A/CCS 10B).

Social Science courses increase students' understanding of human behavior and social interaction in the context of value systems, economic structures, political institutions, social groups, and natural environments.

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (*must complete sequence*)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (*must complete sequence*)
- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (*must complete sequence*)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (*must complete sequence*)
- AMS 1A - American Cultures to 1877 6 *unit(s)* (*must complete sequence*)
- AMS 1B - American Cultures 1877 to Present 6 *unit(s)* (*must complete sequence*)
- AMS 11 - Visions of Democracy 3 *unit(s)*
- ANTH 11 - Cultural Anthropology 3 *unit(s)*

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (*must complete sequence*)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (*must complete sequence*)
- CHAD 75 - Imagination, Play and Adult Creativity 3 *unit(s)*
- CHAD 76 - Child Development Among Media and Emerging Technologies 3 *unit(s)*
- COMM 10 - Communication and Human Relationships 3 *unit(s)*
- COMM 21 - Performing Culture and Society 3 *unit(s)*
- CS 25 - The Digital World and Society 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)*
- ENGR 25 - The Digital World and Society 3 *unit(s)*
- GEOG 10 - Cultural Geography 3 *unit(s)*
- GEOG 12 - World Regional Geography 3 *unit(s)*
- HIST 1A - World History to 1500 3 *unit(s)*
- HIST 1B - World History from 1500 3 *unit(s)*
- HIST 10A - Western Civilization 3 *unit(s)*
- HIST 10B - Western Civilization 3 *unit(s)*
- HIST 15 - Essentials of U.S. History 3 *unit(s)*
- JOUR 50 - Navigating the News 3 *unit(s)*
- JS 25 - Introduction to Human Rights and Justice 3 *unit(s)*
- LING 20 - Nature of Language 3 *unit(s)*
- LING 24 - Language Variation in Space, Time, & Culture 3 *unit(s)*
- LING 25 - Languages of the World 3 *unit(s)*
- MCOM 72 - Mass Communication and Society 3 *unit(s)*
- PH 15 - Human Life Span 3 *unit(s)*
- POLS 2 - Introduction to Comparative Politics 3 *unit(s)*
- POLS 4 - Introduction to International Relations 3 *unit(s)*
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)*
- PSYC 1 - Introduction to Psychology 3 *unit(s)*
- RECL 15 - Human Life Span 3 *unit(s)*
- SOCI 1 - Introduction to Sociology 3 *unit(s)*
- SOCI 80 - Social Problems 3 *unit(s)*
- WGSS 10 - Women, Gender, and Sexuality Studies 3 *unit(s)*
- WGSS 20 - Women of Color in the U.S. 3 *unit(s)*

E. Human Understanding & Development

3 units

Complete one course.

Human Understanding and Development courses prepare students for lifelong learning and enhance their understanding of the factors that contribute to overall well-being in college and across the human lifespan. Students also learn skills to employ available university resources to support academic and personal development.

- ANTH 25 - Human Lifecourse in Context 3 *unit(s)*
- BIOL 54 - Human Understanding 3 *unit(s)*
- BUS3 12 - Managing My life 3 *unit(s)*

- CA 60 - Creativity Matters 3 *unit(s)*
- CHAD 60 - Child Development 3 *unit(s)*
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)*
- COMM 74 - Fundamentals of Intercultural Communication 3 *unit(s)*
- COMM 74Q - Fundamentals of Intercultural Communication 3 *unit(s)*
- EDCO 4 - Personal, Academic and Career Exploration 3 *unit(s)*
- EDCO 4FY - Personal, Academic and Career Exploration 3 *unit(s)*
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (*specified majors only*)
- GEOL 5 - Sustainability, Human Development, and the Earth 3 *unit(s)*
- GERO 99 - Death, Dying and Religions 3 *unit(s)*
- HUM 99 - Death, Dying and Religions 3 *unit(s)*
- KIN 69 - Stress Management: A Multidisciplinary Perspective 3 *unit(s)*
- LING 22 - Language across the Lifespan 3 *unit(s)*
- MUSC 8 - The Artist's Way 3 *unit(s)*
- NUFS 9 - Introduction to Human Nutrition 3 *unit(s)*
- NUFS 10 - Basic Life Skills 3 *unit(s)*
- PH 1 - Understanding Your Health 3 *unit(s)*
- PHIL 12 - Human Nature and the Meaning of Life 3 *unit(s)*
- PSYC 2Q - Identity Development and Prejudice 3 *unit(s)*
- RECL 10 - Creating a Meaningful Life 3 *unit(s)*
- RELS 99 - Death, Dying and Religions 3 *unit(s)*
- SCED 5 - Sustainability, Human Development, and the Earth 3 *unit(s)*
- SCI 2 - Success in Science 3 *unit(s)*
- SOCI 57 - Community Involvement and Personal Growth 3 *unit(s)*
- TA 48 - Voice & Movement for the Actor 3 *unit(s)*

F. Ethnic Studies

3 units

Complete one course.

Ethnic Studies courses give students the knowledge and skills necessary for comprehending continued sovereignty movements, racial and ethnic dynamics, and colonial settler and social justice histories of the United States; and the socio-historical origins, processes, and consequences of racial construction, racialization, and racial oppression in the society in which they live. Students learn core interdisciplinary and comparative concepts and frameworks in ethnic studies with a focus on understanding race and ethnicity as they apply to the historically defined racialized core groups: Native Americans, African Americans, Asian Americans, and Chicanx/Latinx Americans. Students will gain the skills to better operate as responsible, informed, and constructive citizens in an evolving multiracial and multicultural democracy.

Minimum Grade: A minimum grade of "C-" or better (per the SJSU General Education Requirements).

- AAS 1 - Introduction to Asian American Studies 3 *unit(s)*
- AAS 25 - The Changing Majority: Power and Ethnicity in America 3 *unit(s)*
- AAS 159 - Asian American Media Representation and Popular Culture 3 *unit(s)*
- AFAM 22 - The Humanities in African American Culture 3 *unit(s)*
- AFAM 25 - The Changing Majority: Power and Ethnicity in America 3 *unit(s)*
- AFAM 134 - The Black Civil Rights Movements 3 *unit(s)*
- AFAM 158 - Race, Sport, Activism & Social Movements 3 *unit(s)*

- AFAM 162 - The Aesthetics of Hip-Hop 3 *unit(s)*
- CCS 1 - Introduction to Chicana and Chicano Studies 3 *unit(s)*
- CCS 25 - The Changing Majority: Power and Ethnicity in America 3 *unit(s)*
- CCS 30 - Race and Ethnicity in Public Space 3 *unit(s)*
- NAIS 1 - Intro to Native American and Indigenous Studies 3 *unit(s)*
- NAIS 2 - California Indigenous Peoples 3 *unit(s)*

SJSU Studies - Upper Division Requirements

Students complete 9 units of SJSU studies upper division general education courses (Areas R/S/V). In some cases, SJSU Studies areas are integrated in a single course or overlap with the major.

Grade Option: Areas R, S, and V must be taken for a letter grade.

Second baccalaureate students who earned their first bachelor degree from a regionally accredited institution in the U.S. are not required to take SJSU Studies unless specific courses are required by the major.

Transfer students who complete any portion of upper division GE at another CSU campus may request equivalency for coursework in SJSU Studies. Contact the Undergraduate Education Office for evaluation of coursework.

Areas R, S, and V

9 units

Complete one course from each area.

Minimum Prerequisites:

1. Completion of core GE;
2. Upper division standing; and,
3. Pre/Corequisite: a 100W course is strongly recommended.

Year-Long Course Sequences: Students enroll in 6 units in the fall and 3 units in the spring.

- HUM 177A/177B - Advanced Honors in Integrated Science, Social Science, and Humanities.

R. Earth, Environment, and Sustainability

In Earth, Environment and Sustainability courses, students apply knowledge of scientific theories and concepts as well as quantitative reasoning to explore the relationship between humans and the natural environment. Students achieve an understanding of the role that science plays in addressing complex issues, as well as the potential limits of scientific endeavors and the value systems and ethics associated with scientific inquiry.

- AMS 139 - Animals and Society 3 *unit(s)*
- AFAM 151 - Race, Class and the Environment 3 *unit(s)*
- ANTH 160 - Reconstructing Lost Civilizations 3 *unit(s)*
- ASTR 101 - Modern Astronomy 3 *unit(s)*
- BIOL 100W - Scientific Communication Workshop 3 *unit(s)* (*specified majors only*)
- BIOL 101 - Origins of Life 3 *unit(s)*
- BIOL 110 - Biodiversity and Biopolitics 3 *unit(s)*
- BIOL 135B - Eukaryotic Cell and Molecular Biology II 3 *unit(s)* (*specified majors only*)
- BIOL 159 - Integrative Biology 3 *unit(s)* (*specified majors only*)

- BIOL 160 - Ecology 4 unit(s) (specified majors only)
- BIOL 178 - Integrative Physiology 3 unit(s) (specified majors only)
- BOT 160 - Ecology 4 unit(s) (specified majors only)
- CHAD 130 - Coding for Scientific Discovery 3 unit(s)
- CHEM 131B - Biochemistry Lab II 3 unit(s) (specified majors only)
- COMM 168B - Climate Action and Leadership II 3 unit(s)
- ENGR 100W - Engineering Reports 3 unit(s) (specified majors only)
- ENGR 119 - Energy and the Environment 3 unit(s)
- ENVS 111 - Geology and the Environment 3 unit(s)
- ENVS 113 - Atmospheric Pollution 3 unit(s)
- ENVS 119 - Energy and the Environment 3 unit(s)
- ENVS 151 - Race, Class and the Environment 3 unit(s)
- ENVS 152 - Globalization and the Environment 3 unit(s)
- ENVS 168B - Climate Action and Leadership II 3 unit(s)
- GEOG 107 - Mapping the World 3 unit(s)
- GEOL 103 - Earth Systems and the Environment 3 unit(s)
- GEOL 105 - General Oceanography 3 unit(s)
- GEOL 107 - Prehistoric Life 3 unit(s)
- GEOL 111 - Geology and the Environment 3 unit(s)
- GEOL 112 - Hazards, Risks of Earthquakes and Volcanoes 3 unit(s)
- GEOL 124 - Sedimentology and Stratigraphy 3 unit(s)
- GLST 167 - Changing Ecologies of Globalization 3 unit(s)
- HUM 177A - Advanced Honors in Integrated Science, Social Science, and Humanities 6 unit(s) (must complete sequence)
- HUM 177B - Advanced Honors in Integrated Science, Social Science, and Humanities 3 unit(s) (must complete sequence)
- JOUR 160 - Environmental Journalism 3 unit(s)
- KIN 163 - Science of Physical Fitness and Nutrition 3 unit(s)
- LING 123 - Sound and Communication 3 unit(s)
- METR 112 - Global Climate Changes 3 unit(s)
- METR 113 - Atmospheric Pollution 3 unit(s)
- METR 115 - Wildfire in the Earth System 3 unit(s)
- METR 168B - Climate Action and Leadership II 3 unit(s)
- MICR 127 - Microbial Physiology 3 unit(s) (specified majors only)
- NUFS 115 - Issues in Food Toxicology 3 unit(s)
- NUFS 139 - Hunger and Environmental Nutrition 3 unit(s)
- NUFS 163 - Science of Physical Fitness and Nutrition 3 unit(s)
- NURS 164AR - Community Health Theory for Nursing BS Program 3 unit(s)
- NURS 172R - Community Health Theory for RN to BSN Program 3 unit(s)
- PH 172 - Contemporary Environmental Health Issues 3 unit(s)
- PHIL 160 - Philosophy of Science 3 unit(s)
- PKG 152 - Globalization and the Environment 3 unit(s)
- SCWK 105 - Social Work and Environmental Justice 3 unit(s)

S. Self, Society & Equality in the U.S.

Students in courses in Self, Society & Equality in the U.S. study the interrelationships of individuals, racial groups, and cultural groups to understand and appreciate issues of equality, structured inequality, and justice in the United

States. By exploring different perspectives and helping students articulate and discuss their own values, Area S courses prepare students to live and work responsibly and cooperatively in a multicultural society.

Courses in the Social Sciences (Area D and Area S) must be completed in at least two different disciplines. Students who take two lower-division Area D courses in the same discipline must take an Area S upper-division GE course in a different discipline.

- AAS 175 - Asian American Communities 3 *unit(s)*
- AE 171A - Aircraft Design I 3 *unit(s)* (*specified majors only*)
- AE 172A - Spacecraft Design I 3 *unit(s)* (*specified majors only*)
- AFAM 152 - Black Feminisms 3 *unit(s)*
- AFAM 159 - The Racial Wealth Gap in America 3 *unit(s)*
- AFAM 170 - Interracial Intimacies and Mixed Race Identity in the U.S. 3 *unit(s)*
- AMS 169 - The American Dream 3 *unit(s)*
- ANTH 140 - Human Sexuality 3 *unit(s)*
- BIOL 140 - Human Sexuality 3 *unit(s)*
- BME 198A - Senior Design Project I 2 *unit(s)* (*specified majors only*)
- BUS3 186 - Professional and Business Ethics 3 *unit(s)*
- CA 172 - The Arts in U.S. Society 3 *unit(s)*
- CCS 130 - Chicanas and Chicanos in American Society 3 *unit(s)*
- CCS 160 - Gender and Sexuality in the Chicana/o Community 3 *unit(s)*
- CHAD 102 - Development of Self in a Culturally Diverse Society 3 *unit(s)*
- CHAD 131 - Equity, Resilience, and Risk in Public Schools 3 *unit(s)*
- CMPE 195A - Senior Design Project I 2 *unit(s)* (*specified majors only*)
- COMM 157SL - Community Action/Community Service 3 *unit(s)*
- COMM 168A - Climate Action and Leadership I 6 *unit(s)* (S/V)
- COMM 174 - Intercultural Comm and Structural Inequalities 3 *unit(s)*
- EDLD 101 - Rediscovering Disability Studies at the Intersections 3 *unit(s)*
- EDLD 160 - 1st Generation College Students Pathways 3 *unit(s)*
- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)*
- EDUC 157SL - Community Action/Community Service 3 *unit(s)*
- EE 198A - Senior Design Project I 1 *unit(s)* (*specified majors only*)
- ENGL 117A - American Literature, Film, & Culture 3 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)*
- ENGL 172 - The Arts in U.S. Society 3 *unit(s)*
- ENGR 157SL - Community Action/Community Service 3 *unit(s)*
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (*specified majors only*)
- ENGR 195C - Interdisciplinary Senior Project I 3 *unit(s)* (*specified majors only*)
- ENVS 150 - Introduction to Environmental Thought 3 *unit(s)*
- ENVS 168A - Climate Action and Leadership I 6 *unit(s)* (S/V)
- GEOG 140 - The United States 3 *unit(s)*
- GERO 107 - Aging and Society 3 *unit(s)*
- HA 157SL - Community Action/Community Service 3 *unit(s)*
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)*
- HIST 185 - LGBTQ+ History in the United States 3 *unit(s)*
- HIST 188 - History of Women in the United States 3 *unit(s)*
- HUM 169 - The American Dream 3 *unit(s)*
- HUM 177A - Advanced Honors in Integrated Science, Social Science, and Humanities 6 *unit(s)* (*must complete sequence*)

- HUM 177B - Advanced Honors in Integrated Science, Social Science, and Humanities 3 *unit(s)* (*must complete sequence*)
- HUM 191 - Religion in America 3 *unit(s)*
- ISDA 160 - User Experience (UX) Research and Design 3 *unit(s)*
- JS 132 - Race, Gender, Inequality and the Law 3 *unit(s)*
- JS 136 - Family and Community Violence 3 *unit(s)*
- KIN 101 - Sport in America 3 *unit(s)*
- KIN 169 - Diversity, Stress and Health 3 *unit(s)*
- LING 129 - Culture, Language and Ethnicity in the U.S. 3 *unit(s)*
- LSTP 139 - Education and (In)Equality 3 *unit(s)*
- MATE 198A - Senior Design Project 2 *unit(s)* (*specified majors only*)
- ME 195A - Senior Design Project I 3 *unit(s)* (*specified majors only*)
- METR 168A - Climate Action and Leadership I 6 *unit(s)* (S/V)
- MUSC 120 - Worlds of Jazz 3 *unit(s)*
- MUSC 172 - The Arts in U.S. Society 3 *unit(s)*
- NUFS 114B - Community Nutrition (non-majors) 3 *unit(s)*
- NUFS 134 - Multicultural Complementary and Alternative Medicine 3 *unit(s)*
- NUFS 135 - Health Issues in a Multicultural Society 3 *unit(s)*
- NURS 178 - Leadership III 3 *unit(s)*
- NURS 178A - Leadership 3 *unit(s)*
- PH 107 - Aging and Society 3 *unit(s)*
- PH 135 - Health Issues in a Multicultural Society 3 *unit(s)*
- PH 140 - Human Sexuality 3 *unit(s)*
- PH 169 - Diversity, Stress and Health 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)*
- POLS 120 - Law and Society 3 *unit(s)*
- PSYC 191 - The Psychology of Prejudice 3 *unit(s)*
- RECL 111 - Leisure, Culture, and Identity 3 *unit(s)*
- RELS 162 - Religion and Political Controversy in the US 3 *unit(s)*
- RELS 191 - Religion in America 3 *unit(s)*
- RTVF 110 - Media and Culture 3 *unit(s)*
- SCI 157SL - Community Action/Community Service 3 *unit(s)*
- SCWK 107 - Aging and Society 3 *unit(s)*
- SOCI 162 - Race and Ethnic Relations 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)*
- TA 172 - The Arts in U.S. Society 3 *unit(s)*
- URBP 101 - The City 3 *unit(s)*
- WGSS 101 - Sex, Power, and Politics 3 *unit(s)*

V. Cultures and Global Understanding

Courses in Cultures and Global Understanding examine multiple aspects of human expression in cultures and societies outside the United States, including how such cultures develop and influence one another as well as U.S. cultures and societies.

- AE 171B - Aircraft Design II 3 *unit(s)* (*specified majors only*)
- AE 172B - Spacecraft Design II 3 *unit(s)* (*specified majors only*)
- AMS 159 - Nature and World Cultures 3 *unit(s)*

- ANTH 114 - Legacy of Asia 3 *unit(s)*
- ANTH 115 - The Emerging Global Culture 3 *unit(s)*
- ANTH 122 - Magic, Science and Religion 3 *unit(s)*
- ANTH 145 - Middle Eastern Traditions 3 *unit(s)*
- ANTH 146 - Culture and Conflict 3 *unit(s)*
- ARTH 193A - Worlds of Art and Culture 3 *unit(s)*
- ARTH 193B - East Meets West in Art 3 *unit(s)*
- ASIA 104 - Asian Philosophy 3 *unit(s)*
- ASIA 114 - Legacy of Asia 3 *unit(s)*
- ASIA 115 - The Emerging Global Culture 3 *unit(s)*
- ASIA 122 - English as a World Language 3 *unit(s)*
- ASIA 140 - Chinese Culture and Politics Through Literature 3 *unit(s)*
- ASIA 193B - East Meets West in Art 3 *unit(s)*
- AVIA 198 - Aviation and Human Civilization 3 *unit(s)*
- BME 198B - Senior Design Project II 2 *unit(s)* (*specified majors only*)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)*
- CHAD 106 - Concepts of Childhood 3 *unit(s)*
- CHAD 132 - Education from a Global Perspective 3 *unit(s)*
- CHIN 140 - Chinese Culture and Politics Through Literature 3 *unit(s)*
- CMPE 195B - Senior Design Project II 3 *unit(s)* (*specified majors only*)
- CMPE 198 - Technology and Civilization 3 *unit(s)*
- COMM 168A - Climate Action and Leadership I 6 *unit(s)* (S/V)
- COMM 179 - Global Media and Resistance 3 *unit(s)*
- DANC 102 - Dance in World Cultures 3 *unit(s)*
- EDLD 120 - The Right to Learn: Language, Dignity, and Education 3 *unit(s)*
- EDSE 124 - Teach for Social Justice: Language & Disability 3 *unit(s)*
- EE 198B - Senior Design Project II 3 *unit(s)* (*specified majors only*)
- ENGL 117B - Global Film, Literature, and Cultures 3 *unit(s)*
- ENGL 123A - Literatures of the Americas 3 *unit(s)*
- ENGL 123B - Literatures of Africa 3 *unit(s)*
- ENGL 123C - Literatures of the Pacific 3 *unit(s)*
- ENGL 123D - Literatures of Asia 3 *unit(s)*
- ENGL 126 - Holocaust Literature 3 *unit(s)*
- ENGL 127 - Contemporary Theatre 3 *unit(s)*
- ENGL 173 - Thinking About Contemporary World Arts 3 *unit(s)*
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (*specified majors only*)
- ENGR 195D - Interdisciplinary Senior Project II 3 *unit(s)* (*specified majors only*)
- ENGR 198 - Technology and Civilization 3 *unit(s)*
- ENVS 159 - Nature and World Cultures 3 *unit(s)*
- ENVS 168A - Climate Action and Leadership I 6 *unit(s)* (S/V)
- FORL 126 - Holocaust Literature 3 *unit(s)*
- FREN 102B - Francophone Cultures: Through Literature and Cinema 3 *unit(s)*
- GEOG 112 - Nations, Cultures & Globalization 3 *unit(s)*
- GLST 143 - Gender, Power, Intl Dev 3 *unit(s)*
- GLST 188 - Special Topics in International Experiences 3 *unit(s)*
- HIST 118 - Yiddish History and Culture 3 *unit(s)*
- HIST 136 - World Jewish History 3 *unit(s)*
- HIST 153 - History of Women in Europe 3 *unit(s)*

- HIST 155 - 20th Century World 3 *unit(s)*
- HUM 114 - Legacy of Asia 3 *unit(s)*
- HUM 126 - Holocaust Literature 3 *unit(s)*
- HUM 128 - Perspectives on the Twentieth Century: The West in a Global Context 3 *unit(s)*
- HUM 159 - Nature and World Cultures 3 *unit(s)*
- HUM 177A - Advanced Honors in Integrated Science, Social Science, and Humanities 6 *unit(s)* (*must complete sequence*)
- HUM 177B - Advanced Honors in Integrated Science, Social Science, and Humanities 3 *unit(s)* (*must complete sequence*)
- ISE 151 - Engineering Management Systems in Global Society 3 *unit(s)*
- JPN 102B - Local and Minority Cultures in Japan 3 *unit(s)*
- JS 171 - Human Rights and Justice 3 *unit(s)*
- JWSS 118 - Yiddish History and Culture 3 *unit(s)*
- JWSS 126 - Holocaust Literature 3 *unit(s)*
- JWSS 136 - World Jewish History 3 *unit(s)*
- KIN 111 - Sport & Movement in a Global Context 3 *unit(s)*
- KIN 111ITL - Sport & Movement in a Global Context: International Experience 3 *unit(s)*
- LING 122 - English as a World Language 3 *unit(s)*
- MATE 198B - Senior Design Project 2 *unit(s)* (*specified majors only*)
- MCOM 118 - Metaverse, Society and World-Building 3 *unit(s)*
- MDES 145 - Middle Eastern Traditions 3 *unit(s)*
- ME 195B - Senior Design Project II 3 *unit(s)* (*specified majors only*)
- ME 198 - Technology and Civilization 3 *unit(s)*
- METR 168A - Climate Action and Leadership I 6 *unit(s)* (S/V)
- MUSC 117 - Music and Culture in Latin America 3 *unit(s)*
- MUSC 173 - Thinking About Contemporary World Arts 3 *unit(s)*
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)*
- NURS 110ITL - Global Influences on Health 3 *unit(s)*
- PHIL 104 - Asian Philosophy 3 *unit(s)*
- PHIL 110 - Science, Technology and Human Values 3 *unit(s)*
- PHIL 133 - Ethics in Science 3 *unit(s)*
- PHIL 134 - Computers, Ethics and Society 3 *unit(s)*
- POLS 150 - War and Peace 3 *unit(s)*
- POLS 170V - American Politics in Global Perspective 3 *unit(s)*
- RELS 104 - Asian Philosophy 3 *unit(s)*
- RELS 114 - Legacy of Asia 3 *unit(s)*
- RELS 122 - Magic, Science and Religion 3 *unit(s)*
- RELS 145 - Middle Eastern Traditions 3 *unit(s)*
- RTVF 111 - Global Screen Cultures 3 *unit(s)*
- SCWK 106 - Understanding Diversity Through a Transcultural Lens 3 *unit(s)*
- SOCS 139 - World History for Teachers 3 *unit(s)*
- SPAN 102B - Hispanic American Culture 3 *unit(s)*
- TA 127 - Contemporary Theatre 3 *unit(s)*
- TA 173 - Thinking About Contemporary World Arts 3 *unit(s)*
- TECH 198 - Technology and Civilization 3 *unit(s)*
- WGSS 102 - The Global Study of Women 3 *unit(s)*

General Education Academic Advisement

Your college student success center provides general education academic advising to ensure your academic success and help you achieve your educational goals. Undeclared students should visit the Exploratory Student Success Center (formerly the Undergraduate Advising and Success Center).

To make the most of your advising sessions, please observe the following:

- You must be a currently matriculated student at the time you make an appointment.
- Bring a complete set of all college transcripts--unofficial copies are acceptable.
- Bring a copy of your General Education certification if you attended a California Community College. A partial certification is acceptable.
- Review your MyProgress and MyPlanner reports prior to your appointment
- Learn the requirements for your major--see the SJSU Catalog for details.
- See your major advisor.

Note: Admitted students should wait until after attending an orientation program before requesting an appointment. Students who have not yet been admitted to SJSU should make an appointment for advising with Student Outreach and Recruitment at 408-924-2564.

Exploratory Student Success Center (formerly Undergraduate Advising and Success Center, UASC)

www.sjsu.edu/exploratory/

College of Health and Human Sciences (CHHS) Student Success Center

MacQuarrie Hall 533 (Location 1)
408-924-2910
Health Building 105 (Location 2)
408-924-8601
www.sjsu.edu/chhs-ssc

College of Information, Data & Society Student Success Center

Clark Hall 304
<https://www.sjsu.edu/cies/academic/success-center/>

College of Science Student Success Center (formerly College of Science Advising Center, CoSAC)

Duncan Hall (DH) 212
408-924-5193
www.sjsu.edu/science-ssc/

College of Social Sciences Student Success Center (formerly Academic Counseling Center for Excellence in the Social Sciences, ACCESS)

Clark Hall 240
408-924-5363
www.sjsu.edu/socsci-ssc/

Engineering Student Success Center (ESSC)

Engineering Building, Room 344
408-924-3990
www.sjsu.edu/essc

Humanities and the Arts Student Success Center (HASSC)

Clark Hall 244
408-924-5095
www.sjsu.edu/ha-advising

Jack Holland Student Success Center for College of Business (JHSSC)

Boccardo Business Center (BBC) 008
408-924-3435
www.sjsu.edu/lcobssc

Lurie College of Education Student Success Center

Sweeney Hall 106
408-924-3600
www.sjsu.edu/education/studentsuccesscenter

General Education Policies

Per the CSU General Education Breadth Requirements and University Policy S14-5.

1. All students must complete 48 units of approved GE courses with letter grades. If a requirement is waived without unit credit, additional approved GE courses must be taken to complete a minimum of 48 GE units.
2. All three areas of the following must be completed by all students: Core GE (39 units), SJSU Studies (9 upper division GE units) and American Institutions (US123) (0-6 units).
3. Transfer students may fulfill all lower division core GE by completing the Intersegmental GE Transfer Curriculum (IGETC) or a CSU GE 39-unit breadth certification prior to transfer. Having completed the IGETC or CSU GE Breadth certification, the transfer student cannot be held to additional lower division core GE requirements.
4. All students must satisfy SJSU Studies at SJSU regardless of GE completed at other institutions.
Exceptions:
 - A complete 48 unit GE Certification from another CSU is submitted, showing lower and upper division completed.
 - Second baccalaureate students who earned their first bachelor degree from a regionally accredited institution in the U.S.
 - Student completes an approved upper division GE course at another CSU, in person or online.
5. If a course is listed as a sequence (A-B), the entire sequence must be completed to satisfy the requirement.
6. Oral Communication (A1), Written Communication I (A2), Critical Thinking and Writing (A3), Mathematics/Quantitative Reasoning (B4), and Ethnic Studies (F) courses each require a minimum grade of "C-" or better.
7. To find approved courses, check the Course Note Abbreviations listed for the requirement. This designator is printed by each GE class section in the MySJSU Schedule of Classes (access through One.SJSU.edu).
8. All GE courses must be on the approved list of the California Community College (CCC), California State University (CSU) or University of California (UC) for CSU Breadth Requirements or the Intersegmental General Education Transfer Curriculum (IGETC) where and when the course is taken.
9. The following GE courses require prerequisites to enroll:
 - Written Communication I (Area A2), passed with a grade of "C-" or better, is prerequisite to Critical Thinking and Writing (Area A3).
 - Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses (GE Areas R, S and V). Completion of, or co-registration in, 100W is strongly recommended.
10. Subsequent to completion of all CSU General Education Requirements (at the lower and upper divisions), a student may not be required to satisfy additional general education requirements outside of the major program requirements.
11. Complete information on specific requirements and approved courses is found each semester in the General Education Requirements section of the catalog.

General Education Program Goals and Outcomes

Students who complete the General Education curriculum should be able to demonstrate the knowledge, skills and values described below:

Goal 1: To develop students' core competencies for academic, personal, creative, and professional pursuits. Goal 1 has five learning outcomes (PLOs 1-5):

PLO 1. [Oral Communication]

Create and deliver logically-organized, well-supported, and compelling messages both in presentation and in conversation for specific audiences and diverse settings.

PLO 2. [Written Communication]

Develop and practice a writing process that accounts for the goals, dynamics, and genres of written communication, with special attention to the conventions of writing at the university.

PLO 3. [Critical Thinking]

Identify and analyze a subject/topic/issue/problem of significance by evaluating the merits of different positions or perspectives; support the analysis with relevant evidence and information while stating assumptions; and draw evidence-based conclusions.

PLO 4. [Quantitative Reasoning]

Analyze, interpret, and represent quantitative information in various forms to examine a question; explain the processes behind data collection and generation; and communicate evidence in support of an argument or purpose while stating assumptions, limitations, and biases, and drawing appropriate conclusions.

PLO 5. [Information Literacy]: Identify information needs, locate and access relevant and credible information while accounting for bias, and use information legally and ethically.

Goal 2: To enact the university's commitment to diversity, inclusion, and justice by ensuring that students have the knowledge and skills to serve and contribute to the well-being of local and global communities and the environment. Goal 2 has two learning outcomes (PLOs 6 and 7):

PLO 6. [Diversity, Inclusion, and Justice]

Examine diverse cultures, communities, and environments; explore different perspectives; analyze connections to issues of justice/injustice; and prepare to live and work responsibly and cooperatively in multicultural societies.

PLO 7. [Civic and Global Engagement]

Engage with global perspectives and knowledge; develop civic skills, interests, and values; and apply knowledge, skills and values to multicultural, community, and environmental interests.

Goal 3: To offer students integrated, multidisciplinary, and innovative study in which they pose challenging questions, address complex issues, and develop cooperative and creative responses. Goal 3 has two learning outcomes (PLOs 8 and 9):

PLO 8. [Integration and Application]

Integrate and apply knowledge and methods from more than one discipline or area of study to explore a complex question, address an issue, or produce a creative work.

PLO 9. [Reflection and Self-Assessment]

Evaluate and reflect on one's own learning while building on prior knowledge and life experiences.

Developing Educated Persons

Each of the General Education areas develop students to become educated persons.

Fundamental Skills of an Educated Person

Fundamental Skills courses (A1-3, B4) develop students' communication and analytical skills. An educated person can communicate ideas effectively verbally and in writing. An educated person must also have strong reasoning powers in order to analyze all types of information. Per CSU policy, each Fundamental Skills course must be passed with a grade of C- or better to fulfill graduation requirements.

Fundamental Knowledge of an Educated Person

Fundamental Knowledge courses (B1-3, C1-2, D, E, F) develop students' understanding and appreciation of the fundamentals of science, arts and humanities, and the forces that shape the individual and modern society throughout the lifespan. This fundamental knowledge is crucial to understanding more advanced topics, including a major field of study.

Integrated Knowledge of an Educated Person

SJSU Studies courses (R, S, V) help students integrate knowledge between and among disciplines. An educated person is able to apply concepts and methods learned in one area to other areas as part of a lifelong learning process. SJSU Studies courses develop abilities that enable students to live and work intelligently, responsibly, and cooperatively in multicultural societies and to develop abilities to address complex issues and problems using disciplined analytical skills and creative techniques.

Previous General Education Requirements

Students approved for earlier GE patterns have four options:

1. Follow the General Education Requirements pattern in this catalog;
2. Continue to follow their previous pattern using courses that now appear in categories that are the same as the previous pattern;
3. Use courses previously taken when approved for the required categories; or,
4. Use courses in new categories to substitute for previous requirements.

The patterns for the GE Fall 2019-Spring 2021, GE Fall 2018-Spring 2019, and GE Spring 2018 & Earlier are available for reference.

Exceptions for University Graduation Requirements

Exceptions and in rare cases modifications to University Graduation Requirements apply only to students graduating with the below listed majors. View Course Note Abbreviations for a list of GE area abbreviations. Some majors waive the Physical Education Requirement for ADT Transfer Students only. Students may petition to waive some graduation requirements through the Office of Undergraduate Education.

- Aerospace Engineering, BS: GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major); Physical Education Waived; Areas S and V met in the major (AE 171A/AE 171B or AE 172A/AE 172B plus ENGR 195A/ENGR 195B)
- Animation & Illustration, BFA: Physical Education Waived
- Aviation, BS: GE Area B2 (Intensive Science with completion of major); Physical Education Waived
- Biological Sciences - Marine Biology, BS: GE Area A3 met with completion of the major,
- Biomedical Engineering, BS : GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major); Physical Education Waived; Areas S and V met in the major (BME 198A/ BME 198B plus ENGR 195A/ENGR 195B).
- Chemical Engineering, BS : GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major); Physical Education Waived. These exceptions also apply to the Chemical Engineering BS + MS .
- Chemistry, BA: GE Area B2 (Intensive Science with completion of the major)
- Chemistry, BS : GE Area A3 met with completion of the major; GE Area B2 (Intensive Science with completion of the major)
- Chemistry, Biochemistry Concentration, BS: GE Area A3 met with completion of the major; Area R with CHEM 130A and CHEM 131B
- Civil Engineering, BS: GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major); Physical Education Waived
- Computer Engineering, BS: GE Area A3 met with completion of major; Physical Education Waived; Areas S and V met in the major (CMPE 195A/CMPE 195B plus ENGR 195A/ENGR 195B)
- Earth System Science, BS: GE Area B2 (Intensive Science with completion of the major)
- Electrical Engineering, BS : GE Area A3 met with completion of major; Area B2 (Intensive Science); Physical Education Waived; Areas S and V met in the major (EE 198A/EE 198B plus ENGR 195A/ENGR 195B). These exceptions also apply to the Electrical Engineering BS + MS.
- Engineering Technology, Computer Network System Management (CNSM) Concentration, BS and Engineering Technology, Manufacturing Systems Concentration, BS: Area B2 (Intensive Science with completion of the major); Physical Education Waived
- Forensic Science, Biology Concentration, BS: Physical Education Waived
- Geology, BS: GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major)
- Industrial Design, BS: Physical Education Waived
- Industrial and Systems Engineering, BS: GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major); Physical Education Waived
- Interdisciplinary Engineering, BS: GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major); Physical Education Waived; Areas S and V met in the major (ENGR 199A/ENGR 199B plus ENGR 195A/ENGR 195B)
- Materials Engineering, BS: GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major); Physical Education Waived; Areas S and V met in the major (MATE 198A/MATE 198B plus ENGR 195A/ENGR 195B). These exceptions also apply to the Materials Engineering BS + MS.
- Mechanical Engineering, BS: GE Area A3 met with completion of major; Area B2 (Intensive Science with completion of the major); Physical Education Waived; Areas S and V met in the major (ME 195A/ME 195B or ENGR 195C/ENGR 195D plus ENGR 195A/ENGR 195B)

- Meteorology, BS: Area B2 (Intensive Science with completion of the major); Physical Education Waived
- Music, BM with concentrations in Composition, Jazz Studies, Music Education, and Performance: Physical Education Waived
- Physics, BA and Physics, BS: Area B2 (Intensive Science with completion of the major)
- Nursing, BS: Physical Education Waived
- Software Engineering, BS: GE Area A3 met with completion of major; Physical Education Waived; Areas S and V met in the major (CMPE 195A/CMPE 195B plus ENGR 195A/ENGR 195B)

Physical Education Waivers for ADT Transfers

The following Associate for Transfer (ADT) Roadmaps include Physical Education (PE) Waivers:

- Art History and Visual Culture, BA
- Behavioral Science, BA (with AA-T in Global Studies or AA-T in Social Justice Studies)
- Biological Sciences, BA
- Business Administration, Business Analytics Concentration, BS
- Business Administration, Entrepreneurship Concentration, BS
- Business Administration, Finance Concentration, BS
- Business Administration, General Business Concentration, BS
- Business Administration, Operations and Supply Chain Management Concentration, BS
- Business Administration, Hospitality, Tourism and Event Management Concentration, BS
- Business Administration, Human Resource Management Concentration, BS
- Business Administration, Management Concentration, BS
- Chemistry, BA
- Chemistry, BS
- Chinese, BA (with AA-T in Global Studies or AA-T in Social Justice Studies)
- Computer Science, BS
- Economics, BA (with AS-T in Business Administration)
- English, BA
- English, Creative Writing Concentration, BA
- English, Professional and Technical Writing Concentration, BA
- Forensic Science, Biology Concentration, BS
- Forensic Science, Chemistry Concentration, BS
- French, BA (with AA-T in Global Studies or AA-T in Social Justice Studies)
- Geography, BA
- Humanities, Religious Studies Concentration, BA
- Japanese, BA (with AA-T in Global Studies or AA-T in Social Justice Studies)
- Mathematics, BA
- Physics, BS
- Radio-Television-Film, BA
- Spanish, BA
- Spanish, BA (with AA-T in Global Studies or AA-T in Social Justice Studies)
- Spanish, BA, Preparation for Teaching Program

Majors Not Accepting Waiver of 100W

Majors that require students complete the 100W course and do not accept a waiver include:

- African American Studies, BA
- Biological Sciences - Ecology and Evolution, BS
- Biological Sciences - Marine Biology, BS
- Biological Sciences, BA
- Biological Sciences, Ecology and Evolution Concentration, MS
- Biological Sciences, Microbiology Concentration, BS
- Biological Sciences, Molecular Biology Concentration, BS
- Biological Sciences, Systems Physiology Concentration, BS
- Chemistry, BA
- Chemistry, Biochemistry Concentration, BS
- Chemistry, BS
- Child and Adolescent Development, BA
- Child and Adolescent Development, Preparation for Teaching W/CSET Waiver, BA
- Child and Adolescent Development, Preparation for Teaching, BA
- Communication Studies, BA
- Earth System Science, BS
- Economics, BA
- Economics, BS
- Engineering (all majors)
- English, BA
- English, Creative Writing Concentration, BA
- English, Preparation for Teaching (Single Subject), BA
- English, Professional and Technical Writing Concentration, BA
- Environmental Studies, BA
- Environmental Studies, BS
- Environmental Studies, Preparation for Teaching, BA
- Geography, BA
- Geology, BS
- Global Studies, BA
- History, BA

- Information Science and Data Analytics, BS

- Meteorology, BS

- Climate Science, BS
- Nursing, BS
- Political Science, BA
- Psychology, BA
- Social Science, Preparation for Teaching (Single Subject), BA
- World Languages and Literatures (all majors)

Policies and Procedures

Welcome to the listing for San José State University policies and procedures. This listing was created to organize important campus information that is critical to student success. Please suggest ways in which this section can better serve the SJSU community by contacting curriculum@sjsu.edu.

Course Credit & Numbering

- [Course Credit & Numbering](#)
- [Grades](#)

Fees and Financial Aid

- [CSU Tuition Fees Policies](#)
- [Registration Fees](#)

Registration and Attendance

- [Alternative Enrollment Programs](#)
- [Final Examination Policy](#)
- [Leaves of Absence and Withdrawal](#)
- [Registration and Attendance](#)
- [Records Holds](#)

Undergraduate Education

- [Undergraduate Admissions](#)
- [Undergraduate University Graduation Requirements](#)
- [Undergraduate Policies & Procedures](#)

Graduate Studies

- [Graduate Admissions](#)
- [General Graduate Policies & Procedures](#)
 - [Graduate 1290R Enrollment](#)
 - [Graduate Processes for Reinstatement](#)
- [Master's Requirements](#)
- [Doctoral Requirements](#)
- [Spartan Accelerated Graduate Education \(SAGE\) Programs](#)

Regulations

- [Civil and Criminal Penalties for Violation of Federal Copyright Laws](#)
- [Health Policies](#)
- [Privacy Rights of Students in Education Records](#)

- Professional Education Scholastic Regulations
- CSU Nondiscrimination Policy and Title IX

Calendar

2024-2025 Academic Year

Academic Year August 19, 2024 to May 23, 2025

Fall Semester August 21, 2024 to December 20, 2025

Spring Semester January 21, 2025 to May 23, 2025

Event	Fall 2024	Spring 2025
First Day of Instruction	August 21, 2024	January 23, 2025
Enrollment Census Date	September 18, 2024	February 19, 2025
Last Day of Instruction	December 9, 2024	May 12, 2025

Printable Academic Year Calendars, including past calendars, are available at Office of the Provost's site.

Academic Standing, Grades, and Registration

The Registrar's Office Calendar includes dates and deadlines for registration, grades, and academic standing:

- Fall 2024
- Spring 2025

Events

The Events calendar includes upcoming campus events, virtual meetings and webinars.

Exams

Visit the Testing Office site for more information about the Test of Essential Academic Skills (TEAS). The Final Examination Schedule includes dates for final exams, including a make-up day for fall and spring terms. The final exam for **Winter and Summer sessions** are normally scheduled for the last day of the term.

Fees and Housing

Payment due dates are based on when you register, see Bursar's payment schedule. The Office of Financial Aid and Scholarships post deadlines regarding financial aid and scholarships. University Housing Services includes dates for housing applications.

New Students

If you are a new student, you will need to attend a **New Student Orientation**. See the respective pages for dates: Freshman, Graduate, or Transfers.

Holidays / No Classes

Event	Type	Date
Independence Day	Campus Closed	July 4, 2024
Labor Day	Campus Closed	September 2, 2024
Veterans Day	Campus Closed	November 11, 2024
Non-Instructional Day	No Classes	November 27, 2024
Thanksgiving Holiday	Campus Closed	November 28, 2024 - November 29, 2024
Fall 2024 Study/Conf. Day	No Classes or Exams	December 10, 2024
Winter Break	Campus Closed	December 23, 2024 - January 2, 2025
New Year's Day	Campus Closed	January 1, 2025
Dr. Martin Luther King, Jr. Day	Campus Closed	January 20, 2025
César Chávez Day	Campus Closed	March 31, 2025
Spring Recess	No Classes	March 31, 2025 - April 4, 2025
Spring 2025 Study/Conf. Day	No Classes or Exams	May 13, 2025
Memorial Day	Campus Closed	May 26, 2025
Juneteenth Holiday	Campus Closed	June 19, 2025

Course Credit & Numbering

- Unit of Credit
- Credit Hour
- Course Numbering System
- Course Repeats with Grades Averaged
- Duplicate Credit - Inadmissible Repeats
- Excess Units
- Maximum Unit Load
- Transcript of Record
- Repetition of Courses
- Verification of Unit Load

Unit of Credit

The unit of credit is the semester unit. Transferred work from a quarter-system college or university will be converted to semester-system units and grade points. Each semester unit is equal to one and one-half quarter units.

Credit Hour

On July 1, 2020, the United States Department of Education changed its definition of the student credit hour. Fundamentally, the change shifted responsibility for credit hour compliance to the accreditation agency and/or to the state.

SJSU defines a credit hour in accordance with the CSU's accreditor, the WASC Senior College and University Commission (WSCUC), which publishes its own updated definition of student credit hour and related accreditation processes. The new regulations no longer require an accrediting agency to review an institution's credit hour policy and procedures. It does require WSCUC to review an institution's definition of credit hour and an institution's processes and policies for ensuring the credit hour policy is followed.

The CSU/SJSU credit hour definition is consistent with federal law (600.2 and 600.4 revised July 1, 2020) and the requirements of the WSCUC. The CSU defines a credit hour as an amount of work represented in stated learning outcomes and verified by evidence of student achievement. Such evidence is an institutionally established equivalency that:

1. Approximates not less than:
 - a. One hour of direct faculty instruction and a minimum of two hours of out-of-class student work each week for approximately 15 weeks for one semester or equivalent amount of work over a different amount of time; or
 - b. At least an equivalent amount of work as required in paragraph 1.1 of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work and other academic work leading to the award of credit hours; and
2. Permits an institution, in determining the amount of work associated with a credit hour, to take into account a variety of delivery methods, measurements of student work, academic calendars, disciplines and degree levels. Institutions have the flexibility to award a greater number of credits for courses that require more student work.

As in the past, a credit hour is assumed to be a 50-minute (not 60-minute) period. In some courses, such as those offered online, in which "seat time" does not apply, a credit hour may be measured by an equivalent amount of work, as demonstrated by student achievement.

For purposes of accreditation, all CSUs are required to develop, communicate and implement procedures for regular, periodic review of this credit hour policy to ensure that credit hour assignments are accurate, reliable and consistently applied. WSCUC published new draft guidelines that took effect in June 2021. The Office of Academic Scheduling notifies departments of courses that are not in compliance and the department is responsible for resolution of discrepancies. The Office of Academic Scheduling produces a Class Meeting Time Report with the publication of each regular session semester Schedule of Classes. Professional & Global Engagement is responsible for auditing special session courses.

Course Numbering System

1-99 Lower Division Courses (Freshmen and Sophomores)

Lower division courses are numbered 1-99 and should be designed for freshmen and sophomores. Many lower division courses have articulation agreements secured with California community colleges. The articulation agreements are available, as well as General Education (GE) articulation agreements. Visit the Articulation webpage for more information.

100-199 Upper Division Courses (Juniors and Seniors)

Upper division courses are numbered 100-199 and should be designed for juniors and seniors. It is recommended that upper division courses have a minimum prerequisite of upper division standing. Articulation agreements are available between university to university and other regionally accredited colleges and universities. Visit the Articulation webpage for more information.

200-299 Master's Courses

Master's courses are numbered 200-299.

300-499 Methods / Professional / Continuing Education Units

Courses in the 300 and 400-series are specially designed for professional in-service and relicensure purposes. Continuing Education Units (CEUs) are given for these courses. Courses are not applicable to degree programs and units earned do not affect grade point totals or average. These courses given by or for other departments are allowed upper division credit and are numbered 300-499.

500-599 Doctoral Courses

Doctoral courses are numbered 500-599.

180 Individual Study and 184 Directed Reading

Individual Studies (180) and Directed Reading (184) are used for independent study and are generally reserved for majors within a department. Normally, no more than four units of 180 and/or 184 may be taken for baccalaureate credit (see Undergraduate University Graduation Requirements).

96, 196, 296, and 596 Experimental Courses

Courses numbered 96, 196, 296, and 596 are offered to meet special demands for experimental courses on a temporary basis and are listed in the Schedule of Classes, but not in the academic catalog.

1000 No Degree Credit

Courses in the 1000-series do not earn credit toward any degree program. Examples: courses with pre-college content and units devoted to thesis, project, or dissertation beyond minimum required units. (Effective May 30, 2016)

Course Repeats with Grade Points Averaged

1. Undergraduate and post-baccalaureate students may repeat a maximum of 28 units for graduation credit (including units repeated for Grade Forgiveness; excluding grades of "W"). After the pool of Grade Forgiveness units have been depleted or used to the fullest extent allowable, the repeat grade shall not replace the original grade. Instead grade points and units from all attempts shall be calculated in the student's SJSU cumulative GPA and overall GPA.
2. Graduate students may repeat a maximum of 9 units of upper division or graduate coursework for graduation credit.
3. Course repeats with Grade Points Averaged will be assigned automatically for all eligible courses as soon as a student registers. When the pool of available units that may be repeated for graduation credit is insufficient for the next repeated course, unused units may be applied to a future course of lower unit value or simply left unused in the pool. If a repeated course is dropped prior to the Drop Deadline or a "W" is recorded for a repeated course, then the Grade Averaged units return to the pool of available units.

Students who (1) have repeated the maximum allowable units, (2) are otherwise making appropriate progress to degree, and (3) still need to repeat courses to fulfill specific major or minor requirements necessary for graduation may petition for an exception to the 28-unit limit. Undergraduate Education and the Registrar's Office will administer the petition process. Any course(s) approved for repeating by this petition process will have Grade Points Averaged.

Duplicate Credit - Inadmissible Repeats

Unless a course is designated "Repeatable for Credit" in the catalog, repeating a course in which a "C or better" was earned on the first attempt is not admissible. This restriction applies whether the first attempt was at another institution and the second attempt at SJSU, or the reverse. Articulation agreements determine if the course at another institution is considered equivalent to an SJSU course. See the course-to-course articulation information.

If the "inadmissible repeat" (second attempt) is taken at SJSU before the transfer record from the first non-SJSU attempt is posted, the units and grade points will appear on the transcript and the grade will initially be calculated into the SJSU and All College grade point averages. Students should be aware that units completed and associated grade points cannot be earned for "inadmissible repeats" and will be removed at any time prior to graduation. The grade earned will be indicated on the student's record. Students should keep track of these units and not count them twice for graduation purposes.

This same restriction about duplicate credit applies to credit earned by AP, CLEP and IB exams that articulate to specific SJSU courses. See credit by exam articulation information. When an exam and a course duplicate credit, the exam credit shall be removed or reduced according to the amount of overlap (EO 1036).

Enrollment Limits and Excess Units

Enrollment limits for undergraduate students will be set on a semester-by-semester basis. Petitions and information are available at the Registrar's Office.

Maximum Unit Load

An undergraduate student who enrolls in 12 or more units is classified as full-time for the purposes of financial aid. An average unit load of at least 30 units per academic year (15 units per semester without summer or winter coursework) is required to complete an undergraduate degree in four years. Advising is essential to be able to complete a degree in a timely and efficient manner. Students with work or family responsibilities outside of school should consult with an advisor and plan their study loads appropriately.

The maximum load for graduate students is normally 16 semester units. Reasonable exceptions beyond this number of up to 18 units may be approved by the graduate advisor and department chair, for sufficient cause, but permission must also be garnered from the Associate Dean of Graduate Studies by means of the Graduate Petition for Excess Units. Loads beyond 18 units for graduate students are prohibited by the CSU. The Graduate Studies & Research Committee strongly recommends that graduate students carry no more than 12 units of 200-level work in any one semester. There is no official minimum load for graduate students other than for those who wish to receive financial assistance or other benefits.

Immigration and Customs Enforcement (ICE) regulations on international students require that undergraduates maintain full-time status of 12 semester units and graduate students 9 semester units, excluding summer in both cases. To appeal this regulation, go to International Student and Scholar Services (ISSS).

Transcript of Record

Transcript Requests

Current and former San José State students have several ways to order official and unofficial transcripts

- Current students should use their MySJSU Account.
- Former students must order from our vendor Parchment. You do not need your SJSU ID number to place an order.
- For an unofficial transcript, log into your MySJSU Account. See this tutorial. If you no longer have access to MySJSU, you must order an official transcript via Parchment.

Visit the Registrar's Office website, for more information on Transcripts.

Holds

Holds may be placed on your student records by campus departments for various reasons (e.g. fees, books, housing, equipment or documents).

General Transcript Regulations:

1. Transcripts are a complete record of all courses and/or degrees completed at San José State University. Transcripts do not include coursework completed at other institutions. Only the transferable units are reflected on transcripts under "Transfer Credit". Transcripts from high schools or other colleges cannot be duplicated.
2. For students who have undergraduate and post-baccalaureate or graduate coursework, please be aware that it is not possible to separate undergraduate coursework from post-baccalaureate or graduate coursework on the transcript. All careers will appear on the transcript as it is considered one official record.

3. Transcript requests are not accepted by fax or email.
4. We do not accept requests for unofficial transcripts. Unofficial transcripts can be obtained through your Student Center page on the MySJSU portal (current and newly graduated students only). If you need assistance with your MySJSU account, please contact the IT Help Desk via e-mail: itservicedesk@sjsu.edu. Former students who no longer have access to their MySJSU must order from Parchment.

Repetition of Courses

In accordance with University Policy, F08-2, undergraduate and post-baccalaureate students (regular enrollment and Open University) may repeat courses only if they earned grades lower than a "C" (including "WU", "IC", and "NC").

Special programs, such as credential programs, that are governed by external standards may require grades higher than a C. In courses specific to those programs, a course repeat may be permitted when the grade does not meet the necessary standard.

Graduate students may repeat courses only if they earned grades lower than a "B" (including "WU", "IC", and "NC").

Repeating a course with an Incomplete ("I") grade is not allowed; a grade must be assigned or the "I" must revert to an "IC" prior to repeating the course. Repeating a course with an "RP" is allowed, although the course instructor and individual departments should be consulted for their requirements in this regard.

The limits on course repetition apply only to units completed at SJSU.

1. See Repeating a Class for more information.
2. Courses designated "Repeatable for Credit" may be repeated even if the original grade was "C" or better.
3. The policies regarding repetition of courses with Grade Forgiveness or Grade Averaging apply only to courses taken and repeated at SJSU.

Verification of Unit Load

In verifying enrollments to the Veterans' Administration, scholarship boards and loan agencies, the university reports the total number of units enrolled as the official unit load for an undergraduate.

The definition of "full-time student" made by the United States Citizenship and Immigration Service (USCIS), Veterans Administration and other agencies may vary. Students who are concerned with their enrollment status are urged to contact the specific agency involved to determine its policies. Full veterans' subsistence payments require a course load of 12 weighted semester units for both graduate and undergraduate students. Graduate students from foreign countries who are in the U.S. on student visas must normally carry 9 semester units to maintain full-time student status, while undergraduate international students must carry 12 semester units to maintain the required full-time status.

Students may request verification of unit load from the Office of the Registrar located in the Student Services Center.

Grades

- Change of Grade
- Grade Appeals and Grade Assignments
- Grade Disputes and Grievances
- Grade Forgiveness
- Grading System
Letter Graded | Auditing | Credit/No Credit | Incomplete | Report Delayed | Report in Progress | Withdrawal
- Grading System for Graduate Work
- Timely Feedback on Class Assignments
- Unauthorized Repeats

Change of Grade

The basic principle underlying changes of grade is that all students be treated fairly and be given equal opportunities to demonstrate their academic learning and earn course grades representing that learning. Application of this criterion precludes the assignment of extra credit unless such assignments were made known and available to all students in the class. It further precludes reconsideration of an individual's graded work unless such opportunity for change of grade is made equally available to all students in the class.

Unless a reconsideration is applied fairly and equally for all students in a class, a change of grade request may be submitted only when there is an error in grading an assignment or course component or in the case of a clerical, computational, transcriptional, or other administrative error. The specific nature of the error shall be recorded on the form requesting the change of grade. Once approved, the original grade will be removed from the transcript, and the new (changed) grade will replace it.

A change of grade request must be submitted by the instructor directly to the Office of the Registrar in a timely fashion. Normally, such requests must be received by the drop deadline of the following Spring or Fall semester and will require the signatures of the instructor and the department chair. Further extension of this deadline will be considered only when there is documentation of the student's attempt(s) to contact both the instructor and the department chair, and the late submission of the change of grade is clearly beyond the student's control.

A change of grade request received after the drop deadline of the following Spring or Fall semester and within one calendar year after the posting of the grade requires the signature of the appropriate college Associate Dean in addition to those of the instructor and the department chair.

A change of grade request received more than one year after the posting of the grade will also require the approval of the Associate Dean for Undergraduate Education or Associate Dean for College of Graduate Studies, as appropriate.

If a request for a change of grade is approved by the instructor but denied at a subsequent level of review, a written explanation for the denial shall be provided to the student, the faculty member, and the department chair.

Grade Appeals and Grade Assignments

Student Fairness Dispute, University Policy S14-3

Assignment of Grades and Provisions for Appeals

The following principles support the minimum standards governing the assignment of grades and provisions for appeals (per CSU Executive Order 1037):

1. Faculty have the sole right and responsibility to provide careful evaluation and timely assignment of appropriate grades.
2. There is a presumption that grades assigned are correct. It is the responsibility of anyone appealing an assigned grade to demonstrate otherwise.
3. In the absence of compelling reasons, such as instructor or clerical error, prejudice or capriciousness, the grade assigned by the instructor of record is to be considered final.
4. Process for student appeal
 1. Students who believe that an appropriate grade has not been assigned should first seek to resolve the matter informally with the instructor of record (per Change of Grade section).
 2. If the matter cannot be resolved informally, the student may pursue a grade appeal and present his or her case to the Student Fairness Committee (according to University Policy S14-3, Student Fairness Dispute Resolution), have it reviewed and, where justified, receive a grade correction.
5. If the instructor of record does not assign a grade, or if he or she does not change an assigned grade when the necessity to do so has been established by appropriate campus procedures, it is the responsibility of other qualified faculty as determined by the appropriate campus entity. "Qualified faculty" means one or more persons with academic training comparable to the instructor of record who are presently on the faculty at that campus.
6. SJSU shall maintain and implement existing policy and procedures covering the assignment of grades and grade appeals that include the following provisions:
 1. The time and manner of reporting course grades including provisions for assuring that such grades have been assigned by the instructor of record.
 2. Circumstances under which the instructor of record may change a grade once assigned, and procedures for making such changes.
 3. A means for preliminary review of potential appeals that may resolve differences before initiation of formal proceedings.
 4. Grounds for which a grade appeal is permitted.
 5. One or more committees for hearing grade appeals that shall provide safeguards to assure due process for both student and instructor. Such committees shall include student membership. Student members shall not participate in assignment of grades.
 6. Procedures whereby grades are assigned by other qualified faculty in circumstances where the instructor of record does not do so, including those instances where a grade change is recommended by a grade appeals committee and the instructor of record does not carry out that recommendation.
 7. Specification of time limits for completion of various steps in the appeal process and of the time period during which an appeal may be brought.
 8. Description of the extent of the authority of the appeals committee(s), including provisions that clearly limit grade changes to instances where there is a finding that the grade was improperly assigned.
 9. Limitation of committee authority to actions that are consistent with other campus and system policies.
 10. A statement that there is a presumption that grades assigned are correct. Thus, the burden of proof rests with the individual who is appealing.
 11. Procedures for dealing with allegations of improper procedure.
 12. Assignment of authority to revise policies and procedures for grade appeals to the campus Academic Senate. The campus president is responsible for ensuring that such revisions conform to the principles and provisions of this executive order.
 13. Provision for annual reporting to the President and Academic Senate on the number and disposition of cases heard.

Integrity of the Academic Record

1. All grades reported at the end of each semester are final, unless changes have been made according to the provisions given above, or those of University Policy F08-2. Students are responsible for reviewing their

grades for accuracy before the beginning of the subsequent term. They are also responsible for verifying their transcripts for changes, e.g., from grade forgiveness, withdrawals, clearance of Incomplete grades, or clearance of Report Delayed (RD) grades.

2. A student who believes he or she has received a grade in error should contact the instructor to verify and, if appropriate, correct the grade. If an instructor is unavailable or absent during the subsequent semester, the student should promptly consult with the department chair about the grade in question. If the department chair is unable to contact the instructor, they shall notify the Associate Dean of the college in writing, requesting that an extension of the grade correction deadline be granted. The Associate Dean will then contact the Office of the Registrar if the request for an extension is deemed valid.
3. After a degree has been posted, no further adjustments can be made on the record except under extraordinary circumstances as determined by Undergraduate Education or College of Graduate Studies.

Grade Disputes and Grievances

What is a Grievance?

A grievance is an allegation of an unauthorized or unjustified act or decision by a faculty or staff or an administrative officer (hereafter referred to as university employee(s)), that in any way adversely affects the status, rights or privileges of a student.

What is a Grade Dispute?

There is a presumption that grades assigned are correct. It is the responsibility of anyone appealing an assigned grade to demonstrate otherwise (CSU Executive Order 1037).

We encourage you to contact the University Ombudsperson with questions or concerns related to a grievance or dispute. The Ombudsperson is a neutral, confidential, and impartial resource accessible to students, faculty, and staff.

For more information, please visit: www.sjsu.edu/ombudsperson.

Grade Forgiveness

Grade Forgiveness

Course Repeats with "Grade Forgiveness."

Grade Forgiveness is the circumstance in which the new grade replaces the former grade with respect to the calculation of GPA. The original grade remains on the transcript. The policy regarding repetition of courses with Grade Forgiveness applies only to courses taken and repeated at SJSU (as stated in University Policy F08-2).

1. Undergraduate and post-baccalaureate students may repeat a maximum of 16 units of total Grade Forgiveness, consisting of a combination of up to 9 units (maximum) of lower division (numbered 0-99) course work, and up to 9 units (maximum) of upper division (numbered 100-199) course work.
2. Graduate (numbered 200-299) course work is not eligible for Grade Forgiveness. Graduate students are not eligible for Grade Forgiveness, but may repeat up to 9 units of upper division or graduate course work through Grade Averaging.
3. Grade Forgiveness will be assigned automatically for all eligible courses as soon as a student registers. Eligible courses include those courses with earned grades lower than a "C" (including "WU", "IC"; but excluding "NC"). Once the pool of available units is insufficient for the next repeated course, unused units may be applied to a future course of lower unit value or simply left unused in the pool. If a repeated course is dropped prior to the Drop Deadline or a "W" is recorded for a repeated course, then the Grade Forgiveness units return to the pool of available lower division or upper division units, as appropriate.

4. To opt out of grade forgiveness: A student may petition to have a repeated course NOT be granted Grade Forgiveness. Such petitions must be submitted prior to the Census Date for the term in which the course is repeated. See www.sjsu.edu/ue/student-petitions/ for instructions and forms.
5. Students may repeat an individual course for Grade Forgiveness only once.
6. Grade Forgiveness shall not be applicable to courses for which the original grade was the result of a finding of academic dishonesty.

Grade Forgiveness that results in a higher GPA will not remove a prior academic standing.

Grading System for Undergraduate Courses - "Traditional Grade Rules"

SJSU does not mail grades. Grades from Spring 1991 to the present are available at MySJSU (Search "MySJSU" in the Search Bar at One.SJSU.edu). SJSU ID and Password required.

Visit the Registrar's website for more information on official transcript requests.

Letter Graded - "Graded" or "Normal Grade Rules"

The grading policy of SJSU provides that A, B, C, D, F, shall be the basic grading system and shall apply to all coursework acceptable toward a degree program except for those courses in which it is mandatory or permissible that Credit/No Credit grades be used. To determine a student's standing, whether "good," probationary, or disqualified, quality of performance and progress toward degree completion are considered based on units attempted, grade points earned, and grade point average (GPA). The scholarship average is based on courses in which letter grades are earned (the total number of grade points divided by the number of units in letter-graded courses). Grade points are assigned as follows.

Grade	Points Per Unit
A+, A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7

F 0.0

WU, NC, CR, I, IC, AU, W, WB, RP 0.0

The grades of "CR," "NC," "AU" (audit), "I," "W," "WB," and "RP" (report in progress) receive no grade points and the units are not considered in computing grade point average. A plus or minus sign following a grade of "A," "B," "C," or "D" will affect the grade points allowed as indicated in the table. A grade of "A+" cannot exceed 4.0 grade points per California Code of Regulations, Title 5, Division 5, Chapter 1, Subchapter 2, Article 2, 40104.

Undergraduate and post-baccalaureate students must maintain an SJSU Cumulative GPA of 2.0 or better (calculated by dividing grade points (GP) by units graded (UG)). See Disqualification and Probation for Undergraduate and Post-baccalaureate students.

Auditing a Class - "AU"

An auditor must be officially enrolled in the course. Enrollment as an auditor is subject to permission of the instructor provided there is space available in the course. Auditors are subject to the same fee structure as credit students, and regular class attendance is expected. Once enrolled as an auditor, a student may not change to credit status unless such a change is requested no later than the last day to add classes in that term. A student who is enrolled for credit may not change to audit after the last day to add classes in that term.

Credit/No Credit - "CR/NC"

Credit/No Credit (CR/NC) - Elective (Undergraduates Only)

An upper-division (Junior or Senior) student shall have the option of taking a maximum of 12 semester units on the basis of Credit/No Credit for courses under the basic letter grade system, as long as the units are not in the major or minor, or in support of, preparation for or prerequisite to the major or minor, or for General Education. Eligible students may choose this option by turning in the CR/NC Option Form, by the add deadline. Students may accumulate a maximum of 60 semester units of Credit/No Credit grades toward a baccalaureate degree.

In addition to turning in the CR/NC Option form, you must have officially added the class. For undergraduate courses: Credit = A, A-, B+, B, B-, C+, C, C-; No Credit = D+, D, D-, F, IC, WU.

Credit/No Credit (CR/NC) - Mandatory

"CR/NC" grades are mandatory for thesis and remedial course work. It is also normally used in projects, field work, internships, individual studies, or directed reading. As recommended by departments and approved by the college dean, credit/no credit grades may be used in activity and laboratory courses, workshops, and selected seminars (colloquia). Students may accumulate a maximum of 60 semester units of Credit/No Credit grades toward a baccalaureate degree (excluding any remedial coursework). A maximum of 30 percent of the units required in a graduate degree can be credit/no credit (e.g., 10 units in a 30-unit program). In accordance with University Policy F18-5:

For undergraduate courses: Credit = A, A-, B+, B, B-, C+, C, C-; No Credit = D+, D, D-, F, IC, WU.

For graduate courses: Credit = A, A-, B+, B, B-; No Credit = C+, C, C-, D+, D, D-, F, IC, WU

Incomplete - "I/IC"

The symbol "I" (Incomplete Authorized) indicates that a portion of required coursework has not been completed and evaluated in the prescribed time period due to unforeseen, but fully justified, reasons and that there is still a possibility of earning credit. The instructor needs to create an incomplete grade agreement for the student when an "I" grade is assigned.

The student cannot re-enroll in the course until the course is completed or lapsed to "IC" (Incomplete Charged) which calculates as an F for GPA or an "NC" for non-traditionally graded courses. It is the student's responsibility to bring pertinent information to the attention of the instructor (regarding the unforeseen reason(s) for requesting an Incomplete) and to determine from the instructor the remaining course requirements that must be satisfied to remove the Incomplete.

In addition, the student must accept the incomplete agreement in a timely manner. See the Incomplete Grade Agreement guide [pdf] on how to review and accept the incomplete agreement. A final grade is assigned when the work agreed upon has been completed and evaluated. Clearing an incomplete grade does not permit retaking previously completed portions of the course, nor does it permit the assignment of additional graded work (e.g., extra credit) that was not available to other students in the class.

An "I" must be made up by the specified deadline in the agreement or within one calendar year following the end of the term in which it was assigned, whichever comes first. If students need more time to finish all required coursework beyond the specified Deadline for Completion in the agreement, they need to contact the instructor to request an extension. The maximum time for completion is two years from the semester in which the Incomplete grade was assigned; requests to extend the deadline beyond two years will be denied. This limitation prevails whether or not the student maintains continuous enrollment.

Failure to complete the assigned work will result in an "I" being converted to an "IC" symbol, or an "NC" for non-traditionally graded courses, unless the faculty member assigns a "grade without further work" at the time the Incomplete is assigned, which would replace the "I" in the student's record after the deadline specified in the Incomplete Agreement.

Report Delayed - "RD"

The "RD" symbol may be used where a delay in the reporting of a grade is due to circumstances beyond the control of the student. The symbol may be assigned by the registrar only and, if assigned, shall be replaced by a substantive grading symbol as soon as possible.

Report in Progress - "RP"

The "RP" symbol is used in connection with courses that typically extend beyond one academic term. It indicates that work is in progress, but that assignment of a final grade must await the completion of additional work. Work is to be completed within one year except for graduate degree projects and theses (supervised courses, e.g., 298 & 299 courses), which have a two-year time limit. Failure to complete the assigned work for an "RP" grade will result in an automatic grade change to an "NC" grade unless a request for an extension has been made and approved.

A final grade will be assigned to all segments of the course based on overall quality. Any extension of this time period must receive prior authorization from the instructor and department chair or school director.

Note: RP grades earned through the Early Start Program between Summer 2012 and Summer 2018 mean that the Early Start requirement was satisfied, but remediation was not completed. These RP grades do not need to be replaced and may appear on a student's final transcript.

Withdrawal - "W"

The symbol "W" on the official transcript indicates that the student was permitted to withdraw from the course after the drop deadline for the term with the approval of the appropriate campus administrator. It carries no connotation of quality of student performance and is not used in calculating grade point average or progress points. However, there are limits on the number of allowable units of "W" on the official transcript. Undergraduate students may withdraw from no more than 18 units. Post-baccalaureate students may withdraw from no more than 12 units. Graduate students may withdraw from no more than 9 units. Exceptions to these unit limits are granted when the cause of withdrawal is due to circumstances clearly beyond the student's control, and the assignment of an Incomplete is not practicable. Such exceptions are designated "WB" for internal processing of drops and withdrawals, and will revert to "W" on the transcript (University Policy S09-7). The grading symbols "WA" (withdrawals granted only during the first 80% of the term for serious and compelling reasons) and "WB" (withdrawals granted anytime during the term, or retroactively after the term, for serious and compelling reasons due to circumstances clearly beyond the student's control) do not appear on the transcript. Instead, "WA" and "WB" grades both show as "W" grades on the transcript.

Undergraduates may download the appropriate petition (course drop or withdrawal from all courses forms). Graduate Students may download the Course Drop/Semester Withdrawal petition.

Withdrawal Unauthorized - "WU"

The symbol "WU" indicates that an enrolled student did not officially withdraw from the course and also failed to complete course requirements. It is used when, in the opinion of the instructor, completed assignments, course activities, or both were insufficient to make a normal evaluation of academic performance possible. For purposes of grade point average and progress point computation this symbol is equivalent to an "F."

Grading System for Graduate Work

Traditional letter grades are used for all courses taken by graduate students except for field work, thesis, project, individual study, and internship courses, which are usually graded Credit/No Credit or Credit/No Credit/Report in Progress. Incomplete grades are not permitted for thesis or project courses, and Credit may not be given for a thesis or project course before completion of the coursework. Graduate students do not have the option of choosing between the traditional or non-traditional grading system. **A grade of Credit in a graduate-level course indicates performance by the student equal to a letter grade of "B-" or above.**

The cumulative GPA for the master's degree (3.0 minimum) includes all letter-graded work in 100-level or 200-level courses completed within the preceding seven years and for which the student received graduate credit, excluding transfer courses taken at another institution and those taken as an undergraduate at SJSU. Both the cumulative GPA and GPA of all of the course grades on the student's candidacy form, with the exception of non-Open University transfer courses, must be at least at the 3.0 level. Both the cumulative GPA and the GPA of all courses on the candidacy form must be a minimum of 3.0.

The cumulative GPA of the graduate student is computed by dividing the total number of grade points earned by the total number of graded units attempted at SJSU, excluding Open University courses that are not counted as degree requirements, after enrollment in the graduate school.

Timely Feedback on Class Assignments

In accordance with Students' Rights to Timely Feedback on Class Assignments, University Policy F13-1, every student has the right to know, within a reasonable time, his or her academic test scores, to review his or her papers and examinations, and to be provided with an explanation of the determination of his or her course grade.

With changing pedagogical perspectives and increasing use of technology, instructors give a much wider range of assignment types - presentations, online discussion, group projects, etc. - and students should be granted the same expectation for feedback on all assignments within a reasonable period as with papers, tests, and examinations.

Unauthorized Repeats

Students are not permitted to repeat courses in which they originally received a "C" or better, regardless of where they took the course originally. However, if this happens, units and grade points for the repeated courses cannot be counted for graduation credit. While the units and grade points may appear on the transcript and the grade may be calculated into the GPA, such units and grade points for repeated courses will be subtracted when the student applies for graduation or when discovered and brought to the attention of the Registrar's Office.

Failure to complete by the deadline, the instructor entered into the agreement, the "I" grade will convert to the grade indicated in the "Grade Without Further Work" section of the agreement. If no grade is indicated, the "I" grade will lapse to an "IC", which is a failing grade **or an "NC" for non-traditionally graded courses.**

CSU Tuition Fees Policies

- Refund of Tuition and Mandatory Fees, Including Non-Resident Tuition
- Fees and Debts Owed to the University
- Nonresident Students (U.S. and Foreign) Tuition
- Determination of Residency for Tuition Purposes
- Average Support Cost Per Full-Time Equivalent Student and Sources of Funds
- Cancellation of Registration or Withdrawal from the University
- Fee Waivers and Exemptions - CSU Systemwide
- Nonresident Alien Tax Assessment
- Dishonored Checks
- Establishment or Abolishment of Campus-Based Mandatory Fees
- Voluntary

Refund of Tuition and Mandatory Fees, Including Non-Resident Tuition

Regulations governing the refund of tuition and mandatory fees, including nonresident tuition, for students enrolling at the California State University (CSU) are included in Section 41802 of Title 5, *California Code of Regulations*. For purposes of the refund policy, mandatory fees are defined as those systemwide and campus fees that are required to be paid in order to enroll in state-supported academic programs at the CSU. Refunds of fees and tuition charges for self-support, special session, and Professional and Continuing Education (PaCE) programs or courses at the CSU are governed by a separate policy established by the University, available in the Fees & Payment page for Professional Education.

To receive a full refund of tuition and mandatory fees, including nonresident tuition, less an administrative charge established by the university, a student must cancel registration or drop all courses before the first day of instruction for the term. Information on procedures and deadlines for canceling registration and dropping classes is available on the Bursar's Office website.

For state-supported semesters, quarters, and non-standard terms or courses of four weeks or more, a student who withdraws during the term in accordance with the university's established procedures or drops all courses before the university-designated drop period will receive a refund of tuition and mandatory fees, including nonresident tuition, based on the portion of the term during which the student was enrolled. No student withdrawing after the 60 percent point in the term will be entitled to a refund of any mandatory fees or nonresident tuition.

A student who, within the university-designated drop period and in accordance with university procedures, drops units resulting in a lower tuition and/or mandatory fee obligation shall be entitled to a refund of applicable tuition and mandatory fees less an administrative charge established by the university.

For state-supported non-standard terms or courses of less than four (4) weeks, no refunds of tuition and mandatory fees, including nonresident tuition, will be made unless a student cancels registration or drops all classes, in accordance with the university's established procedures and deadlines, before the first day of instruction for state-supported non-standard terms or courses or before the first meeting for courses of less than four (4) weeks.

Students will also receive a refund of tuition and mandatory fees, including nonresident tuition, under the following circumstances:

- The tuition and fees were assessed or collected in error;
- The course for which the tuition and fees were assessed or collected was canceled by the university;

- The university made a delayed decision that the student was not eligible to enroll in the term for which tuition and mandatory fees were assessed and collected, and the delayed decision was not due to incomplete or inaccurate information provided by the student; or
- The student was activated for compulsory military service.

Students who are not entitled to a refund as described above may petition the Bursar's Office for a refund demonstrating exceptional circumstances, and the chief financial officer of the university or designee may authorize a refund if they determine that the university did not earn the fees and tuition.

Information concerning any aspect of the refund of fees may be obtained from the Bursar's Office, Student Services Center, 408-924-1601 or via e-mail at bursar@sjsu.edu.

Parking Permit Refunds

Parking permits can be returned for a prorated refund minus an administrative fee. No returns are accepted during the last month of each semester. More information can be found at the Parking Services website.

Fees and Debts Owed to the Institution

Should a student or former student fail to pay a fee or a debt owed to the institution, including tuition and student charges, the institution may "withhold permission to register, to use facilities for which a fee is authorized to be charged, to receive services, materials, food or merchandise or any combination of the above from any person owing a debt" until the debt is paid (see Title 5, California Code of Regulations, Sections 42380 and 42381).

Prospective students who register for courses offered by the university are obligated to pay the charges and fees associated with registration for those courses. Failure to cancel registration in any course for an academic term before the first day of the academic term gives rise to an obligation to pay student charges and fees, including any tuition for reserving space in the course.

The institution may withhold permission to register or other services offered by the institution from anyone owing fees or another debt to the institution. The institution may also report the debt to a credit bureau, offset the amount due against any future state tax refunds due the student, refer the debt to an outside collection agency, and/or charge the student actual and reasonable collection costs, including reasonable attorney fees if litigation is necessary, in collecting any amount not paid when due.

The institution may not withhold an official transcript of grades from anyone owing fees or another debt to the institution (see Title 1.6C.7 (commencing with Section 1788.90) Part 4 of Division 3 of the Civil Code). The institution can still charge a fee to issue transcripts pursuant to published transcript processing fees.

If a person believes they do not owe all or part of an asserted unpaid obligation, that person may contact the Bursar's Office. The Bursar's Office, to which the business office may refer the person, will review all pertinent information provided by the person and available to the university and will advise the person of its conclusions.

Failure to pay total registration fees when due or to clear any debt by the given deadline may result in an additional administrative fee or past-due hold in a student's financial account, preventing students from adding classes or receiving a diploma.

Nonresident Students (U.S. and International) Tuition

Nonresident Tuition (in addition to basic tuition fees and other systemwide fees charged all students): \$396 per unit each semester. The number of units taken will determine the total nonresident tuition paid per term.

Exemption from Non-Resident Tuition for Certain Students

If you attended high school in California for at least three full years and graduated or earned an equivalent, you may be eligible for resident tuition. Students must file an affidavit with the CSU campus stating that they have filed an application with USCIS to legalize their immigration status or will do so as soon as they are eligible. You will need to show proof of attendance and graduation.

Determination of Residency for Tuition Purposes

University requirements for establishing residency for tuition purposes are independent from residency requirements for other purposes, such as for tax purposes or other state or institutional residency. These regulations were promulgated not to determine whether a student is a resident or nonresident of California, but rather to determine whether a student qualifies to pay university fees at the in-state or out-of-state rate. A resident for tuition purposes meets the requirements described in the Uniform Student Residency Requirements. These laws governing residency for tuition purposes at the California State University are California Education Code sections 68000-68086, 68120- 68133, and 89705-89707.5, and California Code of Regulations, Title 5, Subchapter 5, Article 4, sections 41900- 41915. This material can be viewed by accessing the California State University Residency website.

Each CSU's Admissions Office/Registrar's Office is responsible for determining the residency status of that university's new and returning students based, as applicable, on the student's Application for Admission, Residency Questionnaire, and, as necessary, other information the student furnishes. A student who fails to provide sufficient information to establish resident status will be classified as a nonresident.

Residency Requirements

Initial Determination: Eligible Immigration Status, Physical Presence and Intent

A student seeking to pay in-state tuition at a California State University (CSU) as a first-time freshman, transfer, or post-baccalaureate/graduate student must have an eligible immigration status to establish residency (see **Eligible Immigration Information**), meet physical presence by the Residence Determination Date, and demonstrate intent to indefinitely remain in the State of California for more than one year immediately preceding the Residence Determination Date. If the student is under the age of 19 (with limited exceptions), the student's residence status is derived from that of the parent or the legal guardian.

Requirements for Residency for Tuition Purposes

Eligible Immigration Status

A student seeking to pay in-state tuition at a California State University (CSU) as a first-time freshman, transfer, or post-baccalaureate/graduate student must have an eligible immigration status to establish residency. Therefore, the student must be a United States citizen, a permanent resident (Green Card holder), or hold an eligible visa status (all eligible visas can be found at www.calstate.edu/residency).

Students in the category of Deferred Action for Childhood Arrivals (DACA) or Temporary Protected Status (TPS) are also eligible to establish residency for tuition purposes. Also, students adjusting their immigration status, such as asylum, may qualify for residency depending on where they are in the application process.

Most nonimmigrant visa holders, such as an F-1 or J-1, are not eligible to establish California residency for tuition purposes. Students with a visa or without an immigration status should contact the university Admissions Office.

If a student does not qualify as a California resident, the student may be eligible for certain exceptions and exemptions, such as California Nonresident Tuition Exemption, commonly known as AB 540. Nonresident students (including US citizens, permanent residents, and undocumented individuals, including students with a T visa U visa, DACA, Humanitarian Parole (certain countries), Special Immigrant Juvenile, asylum, refugee, or Temporary Protected Status) may be exempted from paying nonresident tuition. Students seeking the AB 540 Exemption must satisfy attendance and graduation/transfer requirements from a California school (e.g., K-12, adult school, and community college).

Physical Presence

The student or parent/guardian must be physically present in California for more than one year immediately preceding the Residence Determination Date in which enrollment is contemplated. For example, if a student plans to attend the CSU for the Fall 2024 academic term, and the Residence Determination Date for that term is September 20, 2024, the student must establish a physical presence in California no later than September 19, 2023.

Residency Determination Dates

CSU Semester Term

Fall	September 20
Winter	January 5
Spring	January 25
Summer	June 1

CalState TEACH

Fall	September 20
Spring	January 5
Summer	June 1

Intent

California law stipulates the burden of proof rests with the student, and merely living in California for a year does not support a claim for residency for tuition purposes. The student, or in some cases a parent or legal guardian, must demonstrate intent to remain indefinitely in the state for more than one year immediately preceding the Residence Determination Date (RDD) and sever all residential ties with the former state or country of residence. If the student is under the age of 19, the student's residence status is derived from that of the parent or legal guardian unless an exception applies. There must be sufficient documentation to demonstrate that intent was established more than one year (a minimum of one year and one day) before the RDD.

Documents must include the student's name, California address, and a date at least one year and one day prior or on the RDD for the term. For students under the age of 19, documents must be in the parent or legal guardian's name unless an exception applies. Also, a parent or legal guardian's immigration status does not preclude a student from establishing residency; therefore, the parent or legal guardian is not required to provide any immigration documents to demonstrate intent.

Evidence demonstrating intent to remain in the State of California indefinitely may vary from case to case but will include, and is not necessarily limited to, the absence of residential ties to any other state, California voter registration and history of actually voting in California elections, maintaining California vehicle registration and driver's license,

maintaining active California bank accounts, filing California income tax returns and listing a California address on federal tax returns, owning residential property or occupying or renting a residence where permanent belongings are kept, maintaining active memberships in California professional or social organizations, and maintaining a permanent military address and home of record in California. For a complete list of acceptable supporting documents, please visit www.calstate.edu/residency under Intent.

Residency Exceptions and Exemptions

Students not classified as California residents for tuition purposes may qualify for an exception or an exemption from payment of nonresident tuition. Exceptions to the general residency requirements are contained in California Education Code sections 68070-68086 and California Code of Regulations, Title 5, Subchapter 5, Article 4, sections 41906- 41906.6, 41910. Whether or not an exception applies to a particular student can only be determined after submitting application for admission and, as necessary, additional supporting documentation. Because neither the university nor the Chancellor's Office staff may give legal advice, applicants are strongly urged to review the material and consult with a legal advisor. Residency application deadlines and determination dates are found on the Office of the Registrar's Residency website.

Reclassification - Financial Independence (only applies to continuing students)

A student classified as a nonresident for a prior term may seek reclassification in any subsequent term; however, reclassification requires that, in addition to satisfying the requirements of physical presence and intent to remain indefinitely in the state, the student must also satisfy the requirement of financial independence as outlined in Title 5 CCR § 41905.5. To do so, the student must contact the appropriate person in the university Admissions Office and complete a Residency Questionnaire Form and provide supporting documents.

41905.5 Residence Reclassification - Financial Independence Requirement

- Any nonresident student requesting reclassification to resident for tuition purposes must demonstrate financial independence.
- Student has not and will not be claimed as an exemption for state and federal tax purposes by their parent in the calendar year the reclassification application is made and in any of the three calendar years before the reclassification application.
- Student has not and will not receive more than seven hundred fifty dollars (\$750) per year in financial assistance from their parent in the calendar year the reclassification application is made and in any of the three calendar years before the reclassification application.
- Student has not lived and will not live for more than six weeks in their parent's home during the calendar year the reclassification application is made and in any of the three calendar years before the reclassification application.
- Note: Students who receive a government scholarship and/or financial assistance should be viewed the same as state and federal financial aid and athletics grants-in-aid; and should not be counted as parental support.
- Effective Fall 2020 academic term, if the student meets at least one of the following criteria, the student does not have to meet the financial independence requirement. Student must provide the university Admissions Office supporting documents (e.g., state income tax returns, court documents, marriage certificate, military order form) that demonstrate they meet the criteria.
 - Dependent on a parent who has California residence for more than one year immediately preceding the residence determination date;
 - Enrolled in a graduate or postbaccalaureate program, regardless of age;
 - Turned 24 years of age by the residence determination date;
 - Married or registered domestic partner as of the residence determination date;
 - Active duty members serving in the U.S Armed Forces;
 - Veteran of the U.S. Armed Forces;
 - Legal dependent other than spouse or registered domestic partner;

- Former ward of the court, foster youth or both parents are deceased
- Declared by a court to be an emancipated minor; or
- Unaccompanied youth who is homeless or at risk of becoming homeless.

Residency Appeals

A student classified as a nonresident may appeal a final university decision within 30 days of notification by the university. Appeals will be accepted only if at least one of the following criteria applies:

1. The decision was based on:
 - a. A significant error of fact by the university;
 - b. A significant procedural error by the university; or
 - c. An incorrect application of the law which, if corrected would require that the student be reclassified as a California resident; and/or
 - d. Significant new information, not previously known or available to the student, became available after the date of the university decision classifying the student as a nonresident and based on the new information, the classification as a nonresident is incorrect.

Instructions to submit an appeal and additional information can be found on the California Residency for Tuition Purposes website.

Appeals via email, fax and U.S. mail will not be accepted. A student with a documented disability who is requesting accommodation to submit an appeal through the California State University (CSU) website should contact Student Affairs and Enrollment Management at residencyappeals@calstate.edu.

The Office of the Chancellor will either decide the appeal or send the matter back to the university for further review.

A student incorrectly classified as a resident or incorrectly granted an exception from nonresident tuition is subject to reclassification as a nonresident or withdrawal of the exception and subject to payment of nonresident tuition in arrears. If incorrect classification results from false or concealed facts, the student may also be subject to discipline pursuant to Section 41301 of Title 5 of the California Code of Regulations. A student previously classified as a resident or previously granted an exception is required to immediately notify the Admissions Office if the student has reason to believe that the student no longer qualifies as a resident or no longer meets the criteria for an exception.

Changes may have been made in the rate of nonresident tuition and in the statutes and regulations governing residency for tuition purposes in California between the time this information is published and the relevant residency determination date. Students are urged to review the statutes and regulations stated above.

Average Support Cost Per Full-Time Equivalent Student and Sources of Funds

The total support cost per full-time equivalent student (FTES) includes the expenditures for current operations, including payments made to students in the form of financial aid, and all fully reimbursed programs contained in state appropriations. The average support cost is determined by dividing the total cost by the number of FTES. The total CSU 2023-24 budget amounts were \$4,988,6754,000 from state General Fund (GF) appropriations, \$2,459,737,000, from gross tuition revenue, and \$707,090,000 from other fee revenues for a total of \$8,155,501,000. The 2023-24 resident FTES target is 387,114 and the nonresident FTES based on past-year actual is 20,907 for a total of 408,021 FTES. The GF appropriation is applicable to resident students only whereas fee revenues are collected from resident and nonresident students. FTES is derived by dividing the total student credit units attempted by a fixed amount depending on academic level (e.g., 30 for a semester university and 45 for a quarter university, the figures that define a full-time undergraduate or postbaccalaureate student's academic load).

Average Cost 2023-24	Amount	Average Cost per FTES	Percentage
State Appropriation (GF) 1	\$ 4,988,674,000	\$ 12,887	61.2%
Gross Tuition Revenue 2	\$ 2,459,737,000	\$ 6,028	30.1%
Other Fees Revenue 2	\$ 707,090,000	\$ 1,733	8.7%
Total Support Cost	\$ 8,155,501,000	\$ 20,648	100%

1. Represents state GF appropriation in the Budget Act of 2023-24; GF is divisible by resident students only (387,114 FTES).
2. Represents CSU Operating Fund, gross tuition and other fees revenue amounts submitted in university September 2023-24 final budgets. Revenues are divisible by resident and nonresident students (408,021 FTES).

The 2023-24 average support cost per FTES based on GF appropriation and tuition fee revenue only is \$18,915 and \$20,648, which includes all fee revenue (e.g., tuition fees, application fees, and campus mandatory fees) in the CSU Operating Fund. Of this amount, the average tuition and other fee revenue per FTES is \$7,761.

The average CSU 2023-24 academic year, resident, undergraduate student basic tuition and other mandatory fees required to apply to, enroll in, or attend the university is \$7,622 (\$5,742 tuition fee plus \$1,880 average campus-based fees). However, the costs paid by individual students will vary depending on the university, program, and whether a student is part-time, full-time, resident, or nonresident.

Cancellation of Registration or Withdrawal from the University

Students who find it necessary to cancel their registration or withdraw from all classes after enrolling for any academic term must follow the university's official withdrawal procedures. Failure to follow formal university procedures may result in an obligation to pay fees, the assignment of failing grades in all courses, and the need to apply for readmission before being permitted to enroll in another academic term. Information on canceling registration and withdrawal procedures is available from the Office of the Registrar.

Students who receive financial aid funds must consult with the Financial Aid and Scholarships Office before withdrawing from the university regarding any required return or repayment of grant or loan assistance received for that academic term or payment period. If a recipient of student financial aid funds withdraws from the institution during an academic term or a payment period, the amount of grant or loan assistance received may be subject to return and/or repayment provisions.

For further information, consult www.sjsu.edu/bursar and www.sjsu.edu/faso.

Fee Waivers and Exemptions - CSU Systemwide

The California Education Code provides for the waiver of mandatory systemwide tuition fees as summarized below:

Section 66025.3(a) - Dependent eligible to receive assistance under Article 2 of Chapter 4 of Division 4 of the Military and Veterans Code; child of any veteran of the United States military who has a service-connected disability, has been killed in service, or has died of a service-connected disability, and meets specified income provisions; dependent, or surviving spouse who has not remarried of any member of the California National Guard who, in the line of duty, and while in the active service of the state, was killed, died of a disability or permanently disabled as a result of an event that occurred while in the active service of the state, and any undergraduate student who is a

recipient of a Medal of Honor, or an undergraduate student who is a child of a recipient of a Medal of Honor who is 27 years old or younger, who meets the income restriction and California residency requirement.

Section 66025.3(b) - Current or former foster youth who is 25 years of age or younger; has been in foster care for at least 12 consecutive months after reaching 10 years of age; meet any of the following:

- i. Is under a current foster care placement order by the juvenile court;
- ii. Was under a foster care placement order by the juvenile court upon reaching 18 years of age;
or
- iii. Was adopted, or entered guardianship, from foster care; The current or former foster youth needs to complete and submits the Free Application for Federal Student Aid (FAFSA);
- iv. Maintains a minimum grade point average and meets other conditions necessary to be in good standing at the university; and meet the financial need requirements established for Cal Grant A awards under Chapter 1.7 (commencing with Section 69430) of Part 42.

The waiver of mandatory systemwide tuition and fees under this section applies only to a person determined to be a resident of California pursuant to Chapter 1 (commencing with Section 68000) of Part 41 of the California Education Code.

Section 66602 - A qualifying student from the California State University (CSU) who is appointed by the Governor to serve as Trustee of the California State University (CSU) for the duration of the student member's term of office.

Section 68120 - Surviving spouse or child of a deceased California resident who was employed by a public agency or was a contractor, or an employee of a contractor, performing services for a public agency, or was a firefighter employed by the federal government whose duty assignment involved the performance of firefighting services in this state. The deceased person's principal duties consisted of active law enforcement service or active fire suppression and prevention, and was killed in the performance of active law enforcement or active fire suppression and prevention duties (referred to as Alan Pattee Scholarships). Additionally, a person who qualifies for the waiver under this section as a surviving child of a contractor, or of an employee of a contractor, who performed services for a public agency, must be enrolled as an undergraduate student at California State University and meet the applicable income restriction requirement with supporting documentation (i.e. student's income, including the value of parent support, does not exceed the maximum household income and asset level for an applicant for a Cal Grant B award).

Section 68120.3 - Surviving spouse (until January 1, 2033) or surviving child (until attaining the age of 30) of a deceased California resident who was a licensed physician or licensed nurse employed by or under contract with a health facility regulated and licensed by the State Department of Public Health to provide medical services, or a first responder employed to provide emergency services as described in Section 8562 of the Government Code. The deceased person's principal duties consisted of providing medical services or emergency services during the COVID-19 pandemic state of emergency (started March 4, 2020, until the Governor lifts the state of emergency), and the deceased person died of COVID-19 during the COVID-19 pandemic state of emergency. The person who qualifies for this waiver must enroll as an undergraduate student at a CSU, was a resident of California during the COVID-19 pandemic state of emergency, and the annual income (including the value of parent's support) does not exceed the maximum household income and asset level for an applicant for a Cal Grant A award, as set forth in Section 69432.7.

Section 68121 - A qualifying undergraduate student (until attaining the age of 30) who is the surviving dependent of any individual killed in the September 11, 2001, terrorist attacks on the World Trade Center in New York City, the Pentagon building in Washington, D.C., or the crash of United Airlines Flight 93 in southwestern Pennsylvania, if the student meets the financial need requirements set forth in Government Code Section 69432.7 for the Cal Grant A Program and either the surviving dependent or the individual killed in the attacks was a resident of California on September 11, 2001.

Section 69000 - A California resident who has been exonerated, as that term is defined in Section 3007.05 of the Penal Code; completes and submits the FAFSA; and meets the financial need requirements established for Cal Grant

A awards. The student's mandatory systemwide tuition and fees waived pursuant to this subdivision shall not have in excess of the equivalent of six years of full-time attendance in an undergraduate program.

Students who may qualify for the above benefits should contact the Admissions/Registrar's Office for further information and/or an eligibility determination.

The California Education Code provides for the following nonresident tuition exemptions as summarized below:

Section 68075 - A student who is a member of the Armed Forces of the United States stationed in this state, except a member of the Armed Forces assigned for educational purposes to a state-supported institution of higher education, is entitled to resident classification only for the purpose of determining the amount of tuition and fees. If that member of the Armed Forces of the United States who is in attendance at an institution is thereafter transferred on military orders to a place outside this state where the member continues to serve in the Armed Forces of the United States, the member shall not lose the member's resident classification so long as the member remains continuously enrolled at that institution.

Section 68075.7 - A nonresident student is exempt from paying nonresident tuition or any other fee that is exclusively applicable to nonresident students if the student:

- Resides in California;
- Meets the definition of "covered individual" as defined in Section 3679(c)(2) of Title 38 of the United States Code; or
- Is eligible for education benefits under the federal Montgomery GI Bill-Active Duty program (Chapter 30 (commencing with Section 3001) of Title 38 of the United States Code), the Veterans Readiness and Employment program (Chapter 31 (commencing with Section 3100) of Title 38 of the United States Code), the Post-9/11 GI Bill program (Chapter 33 (commencing with Section 3301) of Title 38 of the United States Code), or the Survivors' and Dependents' Educational Assistance program (Chapter 35 (commencing with Section 3500) of Title 38 of the United States Code), as each read on January 5, 2022.

Section 68122 - A student who is a victim of trafficking, domestic violence, and other serious crimes who has been granted a status under Section 1101(a)(15)(T)(i) or (ii), or Section 1101(a)(15)(U)(i) or (ii), of Title 8 of the United States Code, shall be exempt from paying nonresident tuition to the same extent as individuals who are admitted to the United States as refugees under Section 1157 of Title 8 of the United States Code.

Section 68130.5 - A nonresident student, other than a person excluded from the term "immigrant" for purposes of the federal Immigration and Nationality Act (8 U.S.C. Sec. 1101), pursuant to paragraph (15) of subsection (a) of Section 1101 of Title 8 of the United States Code, shall be exempt from paying nonresident tuition if the student meets the requirements of (1) through (4), below.

1. Satisfaction of the requirements of either subparagraph (A) or subparagraph (B).
 - a. A total attendance of, or attainment of credits earned while in California equivalent to, three or more years of full-time attendance or attainment of credits at any of the following:
 - i. California high schools;
 - ii. California high schools established by the State Board of Education;
 - iii. California adult schools established by a county office of education, a unified school district or high school district, or the Department of Corrections and Rehabilitation (subject to the class hours' requirement);
 - iv. Campuses of the California Community Colleges (subject to the credit requirements); or

- v. A combination of those schools set forth in clauses (i) to (iv), inclusive.
 - b. Three or more years of full-time high school coursework in California, and a total of three or more years of attendance in California elementary schools, California secondary schools, or a combination of both.
2. Satisfaction of any of the following:
 1. Graduation from a California high school or attainment of the equivalent thereof;
 2. Attainment of an associate degree from a campus of the California Community Colleges; or
 3. Fulfillment of the minimum transfer requirements established for the California State University for students transferring from a campus of the California Community College.
 2. Registration as an entering student at, or current enrollment at, an accredited institution of higher education in California not earlier than the fall semester or quarter of the 2001-02 academic year.
 3. In the case of a person without lawful immigration status, the filing of an affidavit with the institution of higher education stating that the student has filed an application to legalize the student's immigration status or will file an application as soon as the student is eligible to do so.

Nonresident Alien Tax Assessment

International students and scholars receiving payments from San José State University must comply with all federal and state tax reporting responsibilities. The Internal Revenue Service requires that SJSU comply with specific federal tax withholding and reporting regulations when making payments to nonresident aliens. Non-U.S. citizens will be required to complete a Foreign National Information Form to assist in the determination of tax residency and applicable tax withholding liability. Payments affected by these IRS rules include, but are not limited to: compensation, wages, honoraria, consulting fees, scholarships, fellowships, stipends, and some reimbursements for travel and other expenses. Questions regarding nonresident alien tax assessment can be addressed by contacting the Human Resources Service Group at 408-924-2250.

Dishonored Checks

An individual is not officially enrolled until the university has received full payment of fees. The university has not received payment if the bank subsequently dishonors personal checks or eChecks.

Individuals paying registration fees by personal check or ACH (Automated Clearing House) are hereby notified if their check is dishonored by the bank for any reason, the registration is subject to cancellation. A \$25 fee for the first returned check and \$35 thereafter is charged. An additional administrative fee may be charged. All dishonored checks must be paid with money order, cashier check or cash.

Procedure for the Establishment or Abolishment of Campus-Based Mandatory Fees

The law governing the California State University provides that specific campus fees defined as mandatory, such as a student body association fee and a student body center fee, may be established. A student body association fee must be established upon a favorable vote of two-thirds of the students voting in an election held for this purpose (Education Code, Section 89300). The university president may adjust the student body association fee only after the fee adjustment has been approved by a majority of students voting in a referendum established for that purpose. The required fee shall be subject to referendum at any time upon the presentation of a petition to the university president

containing the signatures of 10 percent of the regularly enrolled students at the university. Student body association fees support various cultural and recreational programs, childcare centers, and special student support programs. A student body center fee must be established upon a favorable vote of two-thirds of the students voting in an election held for this purpose (Education Code, Section 89304). Once bonds are issued, the authority to set and adjust student body center fees is governed by provisions of the State University Revenue Bond Act of 1947, including, but not limited to, Education Code sections 90012, 90027, and 90068. A student success fee may be established or adjusted only after the university undertakes a rigorous consultation process and a fee referendum is held with a simple majority favorable vote (Education Code, Section 89712). The student success fee may be rescinded by a majority vote of the students only after six years have elapsed following the vote to implement the fee.

The process of establishing and adjusting other campus-based mandatory fees requires consideration by the campus fee advisory committee and a consultation or student referendum process as established by California State University Student Tuition and Fee Policy, Sections III & IV (or any successor policy). The university president may use consultation mechanisms if they determine that a referendum is not the best mechanism to achieve appropriate and meaningful consultation. A referendum is not required by the Education Code or Student Success Fee policy. The results of the referendum and the fee committee review are advisory to the university president. The president may adjust campus-based mandatory fees but must send a request to the chancellor to establish a new mandatory fee. The president shall provide the campus fee advisory committee a report of all campus-based mandatory fees. The university shall report a complete inventory of all campus-based mandatory fees annually to the chancellor.

For more information or questions, please contact the System Budget Office in the CSU Chancellor's Office at 562-951-4560.

Voluntary

The CSU Board of Trustees established a voluntary student fee, the Student Involvement and Representation Fee (SIRF), which went into effect in the fall 2015 term. This is charged to all students unless they choose to opt out of the fee, which can be done via the student portal. The fee amount is \$2.00 per term. For more information, please visit the California State Student Association (CSSA) website at www.csustudents.org.

Registration Fees

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Course Load Classifications

Audit enrollment does not yield unit load credit for other than fee purposes. Financial aid recipients must enroll at least half-time to qualify for payment from most campus-awarded funds. Payments will be prorated for full-time, three-quarter-time, half-time, and less-than-half-time enrollment in some limited cases. Payments to unclassified graduate students and graduate credential candidates will be based on the credit totals defined for undergraduate students.

Undergraduate Classifications

All undergraduates are classified as full- or part-time by credit totals:

Fall/Spring Semesters

- Full Time = 12.0 or more units
- Three Quarter (³/₄) Time = 8.0-12.0 units
- Greater Than Half (¹/₂) Time = 6.1-7.5 units
- Less than Half (¹/₂) Time = 4.0-6.0 units
- Quarter (¹/₄) Time = 1.0-3.0 unit(s)

Summer Semester

5 Week Session

- Full Time = 3.5 or more units
- Three Quarter (³/₄) Time = 3.0 units
- Half (¹/₂) Time = 2.0-2.5 units
- Quarter (¹/₄) Time = 1.0-1.5 unit(s)

10 Week Session

- Full Time = 7.0 or more units
- Three Quarter (³/₄) Time = 5.5-6.0 units
- Half (¹/₂) Time = 4.0-5.0 units
- Quarter (¹/₄) Time = 1.0-3.5 unit(s)

Notes:

- During the fall/spring/summer terms these classifications also apply to post-baccalaureate unclassified students, 2nd bachelor's students, and credential students.
- International students enrolled in 12 units are classified as full-time during fall/spring/summer.
- Veterans should refer to the Veterans Benefits Overview website for additional classification information for Veterans and Vocational Rehabilitation and Employment benefits.
- Financial Aid applicants should contact the Financial Aid Office for eligible enrollment level.

Graduate Classifications

Post-baccalaureate students enrolled for 4 or more credits of coursework applicable to a graduate program are classified as full-time or part-time according to the unit totals shown below.

Fall/Spring Semesters

- Full Time = 8.0 or more units
- Three Quarter (3/4) Time = 6.0-7.5 units
- Greater Than Half (1/2) Time = 4.5-5.5 units
- Less than Half (1/2) Time = 2.5-4.0 units
- Quarter (1/4) Time = 1.0-2.0 unit(s)

Summer Semester

5 Week Session

- Full Time = 1.5 or more units
- Three Quarter (3/4) Time = 1.0 unit
- Half (1/2) Time = *not available*
- Quarter (1/4) Time = 0.5 unit

10 Week Session

- Full Time = 3.0 or more units
- Three Quarter (3/4) Time = 2.5 units
- Half (1/2) Time = 2.0 units
- Less than Half (1/2) Time = 1.5 units
- Quarter (1/4) Time = 1.0 unit

Notes:

- International classified graduate students enrolled in 8 units are considered full-time and unclassified graduate students enrolled in 12 units are considered full-time students during fall/spring/summer.
- Veterans should refer to the Veterans Benefits Overview website for additional classification information for Veterans and Vocational Rehabilitation and Employment benefits.

2023-24 Schedule of Tuition Fees

The CSU makes every effort to keep student costs to a minimum. Tuition and fees listed in published schedules or student accounts may need to be increased when public funding is inadequate. Therefore, CSU reserves the right, even after tuition or fees are initially charged or initial payments are made, to increase or modify any listed tuition fees. All listed fees, other than mandatory systemwide tuition, are subject to change without notice, until the date when instruction for a particular semester or quarter has begun. All CSU-listed tuition and fees should be regarded as **estimates** that are subject to change upon approval by the Board of Trustees, the Chancellor, or the Presidents, as appropriate. Changes in mandatory systemwide tuition will be made in accordance with the requirements of the Working Families Student Fee Transparency and Accountability Act (Sections 66028 through 66028.6 of the California Education Code).

The following reflects applicable systemwide tuition and fees for semester campuses for undergraduate, credential, graduate, postbaccalaureate, and doctoral programs.

These rates are subject to change.

All Students

Application fee (nonrefundable), payable online at the time of application via credit card or PayPal: \$70

Mandatory systemwide tuition is waived for those individuals who qualify for such exemption under the provisions of the California Education Code (see section on fee waivers).

Students are charged campus fees in addition to tuition and systemwide fees. Information on campus fees can be found by contacting the individual CSUs.

Credit Cards:

Visa, MasterCard, American Express and Discover credit cards may be used for payment of student tuition and fees but may be subject to a non-refundable credit card processing fee.

2023-24 Basic Tuition Cost Per Semester

Units	Per Semester	Per Academic Year
Undergraduate Tuition		
6.1 or more units	\$2,871	\$5,742
0 to 6.0 units	\$1,665	\$3,330
Credential Program Tuition		
6.1 or more units	\$3,330	\$6,660
0 to 6.0 units	\$1,932	\$3,864
Graduate or Other/Post baccalaureate Tuition		
6.1 or more units	\$3,588	\$7,176
0 to 6.0 units	\$2,082	\$4,164

2023-24 Doctorate Tuition *

	Units	Per Semester	Per Academic Year
Audiology	All Students	\$7,371	\$14,742
Education	All Students	\$5,919	\$11,838
Nursing Practice	All Students	\$7,635	\$15,270
Occupational Therapy	All Students	\$8,598	\$17,196
Physical Therapy	All Students	\$8,598	\$17,196

Public Health	All Students	\$9,450	\$18,900
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*Applicable term tuition applies for campuses with special terms, as determined by the campus. Total college year tuition cannot exceed the academic year plus summer term tuition. The summer term tuition for the education doctorate at quarter campuses is equal to the per semester tuition listed in the table. Total tuition for the education doctorate over the college year equals the per academic year tuition plus the per semester tuition for the summer term at all CSU campuses.

2023-24 Graduate Business Professional Fee

	Per Semester
Charge Per Unit	\$270

For students pursuing the MBA or MS Accountancy degrees, the graduate business professional fee is paid on a per unit basis in addition to applicable systemwide tuition and campus fees for specific graduate business programs authorized to assess the fee. A list of academic programs authorized to assess the fee can be found on the CSU Tuition website.

Nonresident Students (U.S. and Foreign)

Nonresident tuition (in addition to basic tuition and other systemwide fees charged all students) for all CSUs:

2023-24 Nonresident Students (U.S. and Foreign)

	Per Semester
Charge Per Unit	\$396

Adding classes will increase the balance on the student account for non-resident students, so check your account after adding classes. The total nonresident tuition paid per term will be determined by the number of units taken.

Mandatory systemwide tuition is waived for those individuals who qualify for such exemption under the provisions of the California Education Code (see section on fee waivers).

Students are charged campus fees in addition to tuition and systemwide fees. Information on campus fees can be found by contacting the individual CSUs.

Mandatory Campus Fees Per Semester

Students are charged campus fees in addition to tuition fees and other systemwide fees.

Fee Type	Total Fee
Student Association	\$105.50
Student Union	\$412.00

Health Center Operations	\$190.00
Health Center Facility Fee	\$38.00
Document Fee	\$18.00
Student Success Excel Tech Fee	\$631.50
Subtotal (Campus Fees)	\$1,125.00

Note: These fees do not include the \$2.00 optional Student Involvement and Representation Fee (SIRF).

Fees and dates subject to change without notice.

Estimated Semester Totals - California Residents

Units	Semester Estimate
Undergraduate	
6.1 - or more units	\$3,996.00
1.0 - 6.0 units	\$2,790.00
Teacher Credential	
6.1 - or more units	\$4,408.50
1.0 - 6.0 units	\$3,010.50
Graduate/Postbaccalaureate	
6.1 - or more units	\$4,713.00
1.0 - 6.0 units	\$3,207.00
Doctorate (Education)	
1.0 or more	\$7,044.00
Doctorate (Nursing)	
1.0 or more	\$8,760.00
Doctorate (Audiology)	

1.0 or more	\$8,496.00
Doctorate (Occupational Therapy)	
1.0 or more	\$9,723.00

2024-25 Schedule of Tuition and Fees

The CSU makes every effort to keep student costs to a minimum. Tuition and fees listed in published schedules or student accounts may need to be increased when public funding is inadequate. Therefore, CSU reserves the right, even after tuition or fees are initially charged or initial payments are made, to increase or modify any listed tuition fees. All listed fees, other than mandatory systemwide tuition, are subject to change without notice, until the date when instruction for a particular semester or quarter has begun. All CSU-listed tuition and fees should be regarded as **estimates** that are subject to change upon approval by the Board of Trustees, the Chancellor, or the Presidents, as appropriate. Changes in mandatory systemwide tuition will be made in accordance with the requirements of the Working Families Student Fee Transparency and Accountability Act (Sections 66028 through 66028.6 of the California Education Code).

The following reflects applicable systemwide tuition and fees for semester campuses for undergraduate, credential, graduate, postbaccalaureate, and doctoral programs.

These rates are subject to change.

All Students

Application fee (nonrefundable), payable online at the time of application via credit card or PayPal: \$70

Mandatory systemwide tuition is waived for those individuals who qualify for such exemption under the provisions of the California Education Code (see section on fee waivers).

Students are charged campus fees in addition to tuition and systemwide fees. Information on campus fees can be found by contacting the individual CSUs.

Credit Cards:

Visa, MasterCard, American Express and Discover credit cards may be used for payment of student tuition and fees but may be subject to a non-refundable credit card processing fee.

2024-25 Basic Tuition

Units	Per Semester	Per Academic Year
Undergraduate Tuition		
6.1 or more units	\$3,042	\$6,084
0 to 6.0 units	\$1,764	\$3,528
Credential Program Tuition		

6.1 or more units	\$3,531	\$7,062
0 to 6.0 units	\$2,049	\$4,098
Graduate/Post Baccalaureate Tuition		
6.1 or more units	\$3,804	\$7,608
0 to 6.0 units	\$2,208	\$4,416

2024-25 Doctorate Tuition*

	Units	Per Semester	Per Academic Year
Audiology	All Students	\$7,812	\$15,624
Education	All Students	\$6,273	\$12,546
Nursing Practice	All Students	\$8,094	\$16,188
Occupational Therapy	All Students	\$9,114	\$18,228
Physical Therapy	All Students	\$9,114	\$18,228
Public Health	All Students	\$9,450	\$18,900

*Applicable term tuition applies for universities with special terms, as determined by the university. Total college year tuition cannot exceed the academic year plus summer term tuition. The summer term tuition for the education doctorate at quarter universities is equal to the per semester tuition listed in the table. Total tuition for the education doctorate over the college year equals the per academic year tuition plus the per semester tuition for the summer term at all CSUs.

2024-25 Graduate Business Professional Fee

	Per Semester
Charge Per Unit	\$285

For students pursuing the MBA or MS Accountancy degrees, the graduate business professional fee is paid on a per unit basis in addition to basic tuition and campus fees for specific graduate business programs authorized to assess the fee. A list of academic programs authorized to assess the fee can be found on the CSU Tuition website.

Nonresident Students (U.S. and Foreign)

Nonresident tuition (in addition to basic tuition and other systemwide fees charged all students) for all CSUs:

2024-25 Nonresident Students (U.S. and Foreign)

	Per Semester
Charge Per Unit	\$420

Adding classes will increase the balance on the student account for non-resident students, so check your account after adding classes. The total nonresident tuition paid per term will be determined by the number of units taken.

Mandatory systemwide tuition is waived for those individuals who qualify for such exemption under the provisions of the California Education Code (see section on fee waivers).

Students are charged campus fees in addition to tuition and systemwide fees. Information on campus fees can be found by contacting the individual CSUs.

Mandatory Campus Fees Per Semester

Students are charged campus fees in addition to tuition fees and other systemwide fees.

Fee Type	Total Fee
Student Association	\$105.50
Student Union	\$412.00
Health Center Operations	\$190.00
Health Center Facility Fee	\$38.00
Document Fee	\$18.00
Student Success Excel Tech Fee	\$631.50
Subtotal (Campus Fees)	\$1,125.00

Note: These fees do not include the \$2.00 optional Student Involvement and Representation Fee (SIRF).

Fees and dates subject to change without notice.

Estimated Semester Totals - California Residents

Units	Semester Estimate
Undergraduate	
6.1 - or more units	\$3,996.00

1.0 - 6.0 units	\$2,790.00
Teacher Credential	
6.1 - or more units	\$4,408.50
1.0 - 6.0 units	\$3,010.50
Graduate/Postbaccalaureate	
6.1 - or more units	\$4,713.00
1.0 - 6.0 units	\$3,207.00
Doctorate (Education)	
1.0 or more	\$7,044.00
Doctorate (Nursing)	
1.0 or more	\$8,760.00
Doctorate (Audiology)	
1.0 or more	\$8,496.00
Doctorate (Occupational Therapy)	
1.0 or more	\$9,723.00

Billing

SJSU does not issue bills. To see the amount of fees owed in MySJSU (One.SJSU.edu), after you register for classes, go to: Student Center> Scroll down to Finances> Account Inquiry > Charges Due (tab). Due dates are posted within 24 hours after class registration. It is the student's responsibility to make payments by the stated deadline - failure to pay fees by the due date or making a partial payment may result in all classes being dropped. The university does not automatically drop classes after the census. If you are on a waitlist, please check your account daily since enrollment in waitlisted classes may result in additional fees owed.

Changing your unit load from 6.0 units to 6.1 or more, will result in additional fees being charged. Check your MySJSU account for your payment due date.

Parking Fees

A variety of parking permits of varying pricing and duration are available for sale through Parking Online Services. For more information, please visit Parking Services, e-mail parking@sjsu.edu, or call 408-924-6556.

Nonresident Tuition Exemptions (AB 540)

If you attended high school in California for at least three full years and graduated or earned an equivalent, you may be eligible for resident tuition. Students must file an affidavit with SJSU stating that they have filed an application with INS to legalize their immigration status or will do so as soon as they are eligible. You will need to show proof of attendance and graduation.

On October 11, 2001, Governor Gray Davis signed Assembly Bill 540 (now Education Code Section 68130.5) creating a new exemption from nonresident tuition for any student who meets ALL of the following criteria:

- a. attended high school in California for 3 or more years;
- b. graduated from a California high school or attained the equivalent;
- c. is registered at, or attending an accredited institution of higher education in California not earlier than Fall 2001; and
- d. if a student without lawful immigration status files an affidavit with the campus stating that he or she has applied to legalize immigration status (using INS form I-130, Petition for Alien Relative) or will do so as soon as he or she is eligible.

See Exemption FAQs for additional information.

Registration Late Fees

Students eligible for participation in advance registration who do not register	\$25
Registration after add deadline through census	\$45
Post Census Late Enrollment Fee	\$200

Those exempt from the late fee(s) prior to enrollment census date are:

- Students enrolled in the Step to College program
- Graduate students who cannot enroll in lower division classes during Advance Registration.

Late Registration

If you add classes during the Late Registration period which change your unit load from 6.0 units to 6.1 or less, additional tuition fees will be due. Review your account via MySJSU (one.sjsu.edu) to find the amount due and the payment deadline. Billing statements are not issued.

Registration - Deferrals and Waivers

In order to receive a tuition fee deferral, your financial aid file must be complete and all requested documents submitted. Check your "To Do" list at MySJSU for requested documents. Once you have submitted all requested documents, a fee deferral will be assigned to your record to hold your classes and delay the payment of registration tuition fees while your financial aid process is completed. To prevent enrollment cancellation, it is your responsibility to submit all requested documents prior to the scheduled tuition fee payment deadline. Be sure to monitor your account at MySJSU for file status changes and "To Do" items.

Important! Financial Aid fee deferrals are temporary and are issued once all requested financial aid documents are submitted. A financial aid fee deferral holds classes and delays the payment of enrollment fees while the financial aid process is completed. To prevent enrollment cancellation, it is the student's responsibility to submit all requested financial aid documents prior to the scheduled fee payment deadline. The financial aid fee deferral does not cover housing charges.

If your tuition fees are to be paid by a third party (i.e. employer, government agency, college savings plan, or foreign embassy), documents must be on file before your payment deadline authorizing the university to bill the agency for your fees. Authorization may be given in person, mailed or faxed to the Bursar's Office at 408-924-1654. If documentation is not received by your payment due date, classes may be dropped.

When financial aid or the amount to be paid by a third party is less than the amount due, you must pay the difference owed.

Federal regulations prevent the university from deducting parking permit charges from financial aid. Financial aid recipients must pay for parking permits separately.

Payment Deadlines - Registration

Check the Bursar's Office website for the latest registration payment deadlines and due dates.

If students do not pay the amount due by the payment due date(s), all classes may be dropped. Note: We do not automatically drop classes after census. Students wishing to partially drop or withdraw from all classes must do so by following the university policies and procedures.

Returned check/ACH payments - 1st time	\$25
Returned check/ACH payments - after 1st time	\$35

For more information

Email: bursar@sjsu.edu
408-924-1601
www.sjsu.edu/bursar/

Installment Payment Plans (IPPs)

The university offers payment plans to assist students in making their payments over a period of time. The university now offers two payment plans, one for tuition and non-resident fees, and one for housing only.

- Tuition fees only payment plan. Sign-up for this plan if you need a monthly payment plan for tuition fees.
- Housing only payment plan. Sign-up for this plan if you need a monthly payment for housing charges.

Sign-up for both plans if you need a monthly payment plan for both tuition and fees, and housing charges.

To enroll in the installment plan, login to MySJSU, navigate to Self service > Student Center > scroll to Finance section > Payment Plans and Account Services. See Bursar's Office for more detailed information on payment plans.

Installment Type	Non-Refundable Processing Fee
Installment Payment Plan (IPP) for tuition and fees	\$35

Installment Payment Plan (IPP) for housing	\$35
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Payment Plan Features

Mandatory campus fees are not included in either payment plan. The initial payment includes campus mandatory fees, optional SIRF fee, First Day Solutions charges and miscellaneous class fees.

Loan, Short Term

Short Term loans are available through the Bursar's Office to assist students with expenses over and above tuition, fees and housing. Short term loans are not intended for paying your student account, as they are funds that you borrow against your account, to be paid back during the semester.

To be eligible, you must:

- Be current on any outstanding debts to the university
- Must have sufficient financial aid or be gainfully employed
- Must be enrolled in at least half-time (six undergraduate or four graduate units).

Selective Service-Eligibility for Aid

The federal Military Selective Service Act (the "Act") requires most males residing in the United States to present themselves for registration with the Selective Service System within thirty days of their eighteenth birthday. Most males between the ages of 18 and 25 must be registered. Males born after December 31, 1959 may be required to submit a statement of compliance with the Act and regulations in order to receive any grant, loan or work assistance under specified provisions of existing federal law. In California, students subject to the Act who fail to register are also ineligible to receive any need-based student grants funded by the state or a public postsecondary institution.

Selective Service registration forms are available at any U.S. Post Office, and many high schools have a staff member or teacher appointed as a Selective Service registrar. Applicants for financial aid can also request that information provided on the Free Application for Federal Student Aid (FAFSA) be used to register them with the Selective Service. Information on the Selective Service System is available and the registration process may be initiated online.

Refunds - Registration

A 100% refund of basic and/or non-resident fees will be given to students who drop all classes or withdraw from the university no later than one day before classes begin. Refundable fees include basic registration fees, non-resident fees, course fees and the miscellaneous SJSU fees. See the Pro-Rata Refund Schedule for detailed information on refund percentages at www.sjsu.edu/bursar.

Students who drop units resulting in a lower fee structure and/or mandatory fee obligation will be entitled to a refund of applicable tuition and mandatory fees up to the end of the designated SJSU Late Registration drop period. There are no refunds for individual course drops after this date. See the Pro-Rata Refund Schedule for detailed information on refund percentages at www.sjsu.edu/bursar.

Financial Aid Students

When students who are receiving financial aid withdraw, the unearned portion of federal and state funds must be returned to the appropriate fund. Financial aid eligibility will be recalculated according to a federal formula. Since funds are based on attendance for the entire semester, financial aid must be recalculated on the actual number of days attended.

For All Students

See Bursar's Office for specific refund details.

Special Session and Open University students

Consult Professional & Global Engagement for specific refund policies.

Non-Resident

If a student completely withdraws or there is a reduction in units, any adjustments to the non-resident tuition is based on the transaction date according to the refund schedule as noted above.

Refunds - Parking Permits

Parking permits can be returned for a prorated refund (which adjusts weekly) minus a \$10 administrative fee. No returns are accepted during the last month of each semester.

For questions or additional information, please contact Parking Services at 408-924-6556 or via email at parking@sjsu.edu.

All refunds are processed at Parking Services, located in the University Police Building.

Alternative Enrollment Programs

- Dual Enrollment Program

e-Learning

San José State University delivers distance education courses via Web-based learning management systems and resources. These courses are offered by individual departments in regular and special sessions.

Intrasystem and Intersystem Enrollment Programs

Fully matriculated students enrolled at any CSU have access to courses at other CSUs on a space-available basis unless those universities/programs are impacted. This access is offered without students being required to be admitted formally to the host university and, in most cases, without paying additional fees. Students should consult their home university academic advisors to determine how such courses may apply to their specific degree programs before enrolling at the host university.

There are two programs for enrollment within the CSU and one for enrollment between CSU and the University of California or California Community Colleges. Additional information about these programs is available from the Registrar's Office concurrent enrollment website.

Due to impaction, SJSU will no longer accept any incoming students until further notice.

CSU Fully Online Courses - CourseMatch and AB386

Matriculated students in good standing may request enrollment in one course per term offered by a CSU host university. Enrollment requests will be granted based on available space, as well as completion of any stated prerequisites. Credit earned at the host university is electronically reported to the student's home university to be included on the student's transcript at the home university. Courses completed via the CSU Fully Online Courses program are treated as units completed in residence.

CSU Visitor Enrollment

Matriculated students in good standing enrolled at one CSU may enroll at another CSU for one term. Credit earned at the host university is reported at the student's request to the home university to be included on the student's transcript at the home university.

Intersystem Cross Enrollment

Matriculated CSU, UC or community college undergraduate students may enroll on a "space available" basis for one course per term at another CSU, UC, or community college and request that a transcript of record be sent to the home university. This program is not available to graduate students.

Dual Enrollment Program

SJSU sponsors a low-cost concurrent enrollment program for area high school students to earn college credit. Students must have permission from their school principal and meet all SJSU course prerequisites, including placement exams. For applications and more information, visit Undergraduate Education - Dual Enrollment.

Open University

Open University is not available to matriculated students.

Open University allows students to earn degree units from SJSU or to take noncredit or Continuing Education Unit programs.

- Fall schedule available online in July.
- Spring schedule available online in December.

For more information go to Open University website.

Professional Education

408-924-2670
professionaled@sjsu.edu

Summer Session

Summer Session offers both matriculated and non-matriculated students the opportunity to enroll in summer classes at San José State University. The program offers hundreds of courses to choose from across three sessions. Schedule policy, procedures and course information are available in April. For more information, see the Summer Session website,

Professional Education

408-924-2670
professionaled@sjsu.edu

Winter Session

Winter Session offers both matriculated and non-matriculated students the opportunity to earn up to four units in three weeks during SJSU's winter intersession. The program allows students to complete graduation requirements, enroll in highly sought after classes, and advance towards their degree. For more information, see the Winter Session website.

Professional Education

408-924-2670
professionaled@sjsu.edu

Professional Degree Programs Offered Through Special Session

Professional degree programs offered through Special Session offer unique opportunities to both traditional students and working professionals to earn graduate degrees and certificates on an alternate/flexible schedule, often online and/or off campus. For more information, see Professional Education website.

Professional Education

408-924-2670
professionaled@sjsu.edu

Registration Fees, Payments and Refunds

Caution!

- Fees are subject to change without notice.
- You are responsible for keeping your MySJSU and email address (which can be accessed through the one.SJSU.edu portal) account current.
- If a check or eCheck is dishonored by the bank for any reason, including keying errors for e-checks, your registration is subject to cancellation.
- Any delinquent outstanding charges owed to the university will be submitted to the Franchise Tax Board for tax refund offset.

All payments apply to the oldest balance on your account. For example, if you are making a registration payment and you have a housing balance with an earlier due date, the payment will apply to the housing charges first. Keep your account current to avoid the possibility of enrollment cancellation.

When you register, your MySJSU will show the balance due and due date. Fees are payable by the due date(s) and must be posted to your account before or on the due date to avoid enrollment cancellation. Please see acceptable methods of payment and payment plan options on the Bursar's Office website.

Failure to pay fees by the due date will result in enrollment cancellation and all classes will be dropped. Note: Classes are not automatically dropped after census. Students wishing to partially drop or withdraw from all classes must do so by following the university policies and procedures.

General Information, Refunds

Bursar's Office
Student Services Center
408-924-1601
www.sjsu.edu/bursar

Residence Status

Enrollment Services
Student Services Center
408-283-7500

Financial Aid Awards

Financial Aid and Scholarship Office
Student Services Center
408-283-7500
www.sjsu.edu/faso/

Final Examination Policy

- Time Frame for Culminating Activities
- Exceptions to Time Frame for Culminating Activities
- Circumstances in which students may request the rescheduling of a culminating activity
- Oversight of Culminating Activities

In accordance with University Policy S17-1, faculty members are required to have a culminating activity for their courses, which can include a final examination, a final research paper or project, a final creative work or performance, a final portfolio of work, or other appropriate assignment. Supervision, internship and individual study courses are not required to have a culminating activity. Visit the Class Schedules Calendar for a detailed listing of the latest term's final exam schedule.

Time Frame for Culminating Activities:

In the case where there is to be a timed, sit down final examination or an online synchronous final, it must occur during the scheduled final examination time for that course. The required submission date and time for take-home examinations, final papers or other culminating activities must fall no earlier than the beginning of the scheduled final examination time for the course. Online asynchronous final exams are to be treated like take-home exams. Final exams shall not be given, nor culminating activities due, during regularly scheduled class periods or on "Study/Conference Day."

Exceptions to Time Frame for Culminating Activities:

Exceptions for the above time frame are justified in the following circumstances:

- Performance courses in which it is impractical to examine each student individually in the time period assigned for final examinations; e.g. performance courses in theater arts, music, or athletics.
- Other such circumstances as approved by the chair with notification and rationale to be provided to the dean.

Circumstances in which students may request the rescheduling of a culminating activity:

- a. A student may request the rescheduling of a culminating activity if there is a verifiable emergency.
- b. A student may request the rescheduling of a culminating activity if three or more are scheduled/due within a 24-hour period. Requests must be made at least three weeks prior to the last class meeting of the semester.
 - If one of the three or more culminating activities scheduled for the same day is a paper or project, the deadline for the paper/project will be moved to a mutually agreeable time within the final examination period.
 - If three or more finals are scheduled on the same day, the student may request an alternative exam date and/or time from any one of the instructors.
 - The final exam makeup day may be used for rescheduled exams.
- c. Regarding a and b above: if a student and instructor are unable to reach agreement on rescheduling, the chair will first be consulted. If no agreement can be found through the department chair, the dean (or designee) will be consulted.
- d. Graduate students should refer to the section on Master's Examinations - Finals.

Oversight of Culminating Activities

The department chairperson will oversee culminating activities (examinations; portfolios; research or creative projects) in a manner that assures that the rules for culminating activities are followed. If a dispute arises, the dean (or designee) will be consulted.

Leaves of Absence and Withdrawal

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One Semester Leaves

Students who have attended at least one semester as matriculated students and who are in good academic standing or on academic notice may choose to be voluntarily absent from the university ("stop out" or not enroll) for one semester (Fall or Spring) without submission of a leave-of-absence petition or any penalty. A student must return the semester following a stop-out semester and continue their enrollment as a matriculated student unless the stop-out semester is immediately followed by an approved leave of absence. If a student does not return in the semester following the one semester stop-out, application for re-admission for the next available admission term is required. If the student is in disqualified status or was disenrolled the previous semester for nonpayment of fees, they can neither apply for a leave of absence nor enroll after the initial absent semester without application for re-admission.

The exception to this rule is that graduate students who have completed all degree requirements except their culminating experience and who either have an RP grade in a project or thesis course or will be taking comprehensive exams may not stop out but must maintain continuous enrollment (see University Policy S17-5). They can do so by taking a 1-unit special session course designed for this purpose. Students should consult their Colleges and Departments or their majors to determine the course to take (1290R). Also consult the section entitled Thesis and Project Work - RP Status. At this stage of the graduate student career, leaves of absence other than medical or military duty will rarely be permitted.

Students who are members of an academic cohort may be restricted by their respective departments or schools in the duration of their leaves. Thus one-semester leaves may not be possible if it is necessary for course enrollment to join a future cohort, which usually would start after one academic year. The individual program director or graduate advisor of the cohort program should be consulted before and after an absence to determine the semester of eligibility to return.

Leaves of Absence

By University Policy S15-3, a formal leave of absence for undergraduate or graduate students in the first or subsequent semesters for medical, care-giving, military service, personal hardship, or educational reasons may be requested by submission of the fully signed and documented Leave of Absence Petition. Submission to the Registrar's Office must precede the leave period except in cases of retroactive leaves. Leaves can be 1-4 semesters in length (with some exceptions). If a stop-out semester is taken prior to the formal leave, that semester counts in the 4-semester maximum period. Following the leave period, re-enrollment is required to avoid application for re-admission. An early return from leave must be accompanied by written notice to the Registrar's Office. Students granted a leave are guaranteed a return to their department even if it is or becomes a program restricting the number of applicants.

Graduate students are eligible for all leaves of absence except when finished with all degree requirements other than their culminating experience (thesis, project, and/or comprehensive exam plus any other components required of the major). At that point, neither stopping out (voluntary absence for a semester) nor financial leaves are permissible and students must register for 1 unit of University Studies (UNVS) 1290R or a Departmental 1290R (Thesis/Project Supervision) through special session every semester until graduation (See Thesis and Project Work - RP Status) to maintain continuous enrollment (see University Policy S17-5). During this stage of a graduate student's career, leaves of absence for any reason beyond medical or military shall be precluded except under rare circumstances.

Time Limits

Course expiration, as per long-standing SJSU practice, (10 years on undergraduate courses and 7 years on graduate courses) shall remain in effect even for students who have taken leaves of absence. Upon a student's return, the student's catalog rights shall pertain to his or her most recent admission date. Graduate students - see the Graduate Policies & Procedures - Time Limits section for more information on time limits.

Types of Leaves

Documentation and a personal statement are always required (though see certain limitations below). Supporting memos from faculty advisors or mentors may be included but are optional, except in the case of educational leaves.

First-Semester Leaves of Absence

These leaves, which are to be awarded sparingly, are for matriculated students exclusively. Therefore, the student must have been admitted into the university rather than merely applying for admission. Any conditions or provisions imposed on admission status that are still in effect shall carry over to the semester of re-enrollment following the leave.

International Student Leaves

International students in F-1 and J-1 status must be enrolled in a full course of study (12 units for undergraduate students; 9 units for graduate students) for two semesters annually (summer and winter breaks not included). International students are eligible for leaves of absence only when authorized by International Student and Scholar Services (ISSS). Lack of enrollment for any reason other than prevention of the ability to pursue one's studies by severe medical circumstances shall result in the student having to leave the US. If the student is able to return from abroad at the expiration of the leave period, he or she shall derive the benefits of having had the formal leave, such as avoiding the readmission process. However, other restrictions, such as in the ability to work within the US, may be imposed by federal immigration regulations. International students in need of a leave of absence must first speak with an international student advisor. Walk-in advising is available at ISSS in Student Union-PGE.

International students may not take a leave of absence and must remain in the United States except for documented medical reasons. International students must be enrolled in a full course of study (12 units for UGRD and 9 units for GRAD) for two semesters annually. Winter and Summer registration are not required. If you have further questions, please contact the International Student and Scholar Services at international-office@sjsu.edu.

Medical Leaves

These leaves (including physical and mental health leaves) must be supported by submission of the Treating Healthcare Professional's Verification of Medical Condition Form. Details of the medical condition or the type of healthcare professional consulted should not be included, only that there is a medical condition that justifies the leave and is supported by a State-certified healthcare professional's authorization with respect to both the severity of the medical condition and the period of need for a leave, as given by means of the Treating Healthcare Professional's Verification of Medical Condition Form. A semester of pregnancy, maternity, or paternity leave (beyond the first stop-out semester) is acceptable.

Planned Student Educational Leaves

An Educational Leave permits a student to be absent from regular attendance for one or more terms while maintaining continuing enrollment status. Applicants must have an intention to return to formal study within a

specified period and a plan for how the time is to be spent. There must be a clear educational objective for award of the leave. At least one supporting letter from an advisor, mentor, or chair from SJSU as well as the consent of the associate dean of the college is also necessary.

The opportunity to apply for such leave is available to all non-international students except those attending their first semester and those in disqualified status.

Leave arrangements must be made in advance with the department in which the student is majoring. Undergraduate students in undeclared status will make leave arrangements with the Exploratory Student Success Center in Administration Building 150. Graduate students will make leave arrangements with the graduate program coordinator in their department.

Primary Caregiver Leaves

In most cases, a healthcare professional's certification of need for the care must be included by submission of the Treating Healthcare Professional's Verification of Medical Condition Form, as indicated above.

Personal Leaves

Personal Hardship Leave

This category encompasses a variety of social or financial insecurities, including, but not limited to, financial hardship, temporary job relocation, increased work hours in order to maintain employment, or housing insecurity. A personal statement of understanding is required and must include objectives to resolve the personal insecurity to be able to return successfully to one's studies.

International Military Service

For international students called to active military duty, leave requests must be supported by a copy of the military orders. Such leaves may not exceed four consecutive semesters.

Retroactive Leaves of Absence

Retroactive leaves may be granted for up to two semesters after the semester of the student's last enrollment, excluding summer and winter sessions. These leaves shall modify the enrollment status retroactively. After two semesters, the student will be required to reapply and be subject to current application deadlines.

U.S. Military Deployment Leaves

Federal law requires that campuses establish and maintain a policy to accommodate students called to serve on active duty in the Armed Forces of the United States. This policy outlines California State University (CSU) campus responsibilities and student rights established by state and federal law.

CSU campuses shall maintain a policy that ensures that students who are members of the Armed Forces are:

- Accommodated if they are temporarily unavailable to attend classes due to military service, or
- Are promptly readmitted to the institution if they must suspend their enrollment due to military service.
- As provided for in the Higher Education Opportunity Act of 2008^[2], students who were previously admitted to the CSU campus but who did not attend, or who attended then left the CSU campus to serve in the Armed Forces of the United States for a period of 30 days or more will be allowed to return to the same program

with the same standing they had when they left. Students returning from military leave shall not be required to submit a new application for admission.

- Students currently serving in the US Armed Forces (particularly those in the Reserve or National Guard) may be called to active duty or be required to fulfill reserve military obligations for periods shorter than 30 days. In recognition of the fact that such service is mandated by state or federal government authorities, absences for these duties shall be considered "excused absences" and shall be accommodated by the CSU campus. This means that the student shall not be penalized for the absence.

Please find the full policy here regarding Military Short Term Leaves, Long Term Leaves, and Readmissions for Military Leaves.

Withdrawal from the University

Students may withdraw officially from all courses through the day before the Census date without academic penalty (no "W" grade on academic record). Please see registration calendar. Students who have compelling reasons to cancel their registration or who wish to withdraw from all classes after the last day to drop without a "W" grade should consult their instructors, department chair or school director, academic advisor, and, for undergraduates, Exploratory Student Success Center in Administration 150. Counseling & Psychological Services might also be sought for assistance.

A completed Petition for Withdrawal form for undergraduates or a Graduate Petition for Course Drop/Semester Withdrawal for graduate students must be submitted. Failure to follow formal university procedures may result in an obligation to pay fees as well as the assignment of failing grades in all courses. Students who leave the university but who do not officially withdraw will receive a grade of "WU" (denotes failure for unauthorized drop or withdrawal) in all of their classes. No personnel actions, grades, or transcript services will be permitted until all financial obligations, such as unpaid fines have been settled. If a student fails to return the semester immediately following withdrawal, reapplication for admission at www.calstate.edu/apply will be required.

Students who receive financial aid must consult with the Financial Aid and Scholarship Office prior to withdrawing from the university regarding any required return or repayment of grant or loan assistance received for that academic term or payment period. If a recipient of student financial aid withdraws from the institution during an academic term or a payment period, the amount of grant or loan assistance received may be subject to return and/or repayment provisions.

Students holding visas must consult with International Student and Scholar Services (ISSS) regarding effects on their visa status before submitting a withdrawal petition.

Refer to the section on Continuous Attendance and Catalog Rights for information about the possible effect a break in attendance may have on requirements for graduation.

Registration and Attendance

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Make sure you have access to one.SJSU.edu.

Make sure your browser (Chrome, Explorer, Firefox or Safari) supports access to MySJSU portal.

For your convenience, computer access locations are available at these campus locations:

- Clark Hall
- King Library
- Associated Students Computer Lab, Student Union
- Lobby, Student Services Center
- Peer Connections, Student Services Center
- Campus wireless hotspots

SJSU ID

- Use your SJSUOne login information to sign into MySJSU. Your SJSU ID, also known as your Tower Card, contains your student ID number on the front.
- Your ID number cannot be changed.
- New students receive this information from Admissions Office communications shortly after submitting a completed application for admission.

Primary Name (Legal Name)

- Will be used on all official university documentation such as the diploma, official/ unofficial transcript, the SJSU ID (Tower) Card, and any documentation involving financial aid or student accounts.
- Must be used when conducting official university business.
- Will be used for student's SJSU email address in this format: FirstName.LastName@sjsu.edu.
- Students may use a name other than their Primary (legal) Name on their diploma. Please visit Diploma Name information page.

If an update or correction is needed, submit Personal Information Change Request form online.

Preferred Name

San Jose State University recognizes that members of our community may choose names other than their legal names to identify themselves. SJSU allows preferred names as long as the name is not used to misrepresent or evade legal obligations. Inappropriate use of the preferred name policy may result in a violation of the Student Conduct Code and be referred to the Office of Student Conduct and Ethical Development. The university reserves the right to remove a preferred name if it is being used improperly. Students should check to ensure that their preferred name is current each semester.

- Current students can set up a "preferred name" by changing first and/or middle names on MySJSU
- The preferred name will only be seen on Class Rosters, Grade Rosters, CANVAS, and the Advisor Center in MySJSU. The student's Primary name (Legal name) will appear on all official documents such as transcripts and diplomas.

- The student's SJSU.edu email address will be the student's Primary name (Legal name) in this format: FirstName.LastName@sjsu.edu.
- CANVAS does have an internal process that allows you to display your preferred name.

Password

- You can set your password for the first time or reset it if you have forgotten it by navigating to one.SJSU.edu and clicking on the Password Help tile.
- When setting or changing your password, pay close attention to the case in which you enter the letters.
- Remember, your password is cASe seNsiTIVE!
- If you are having difficulty resetting your password, please contact itservicedesk@sjsu.edu for assistance. Include your full name, SJSU ID if known, your date of birth, and your mailing address.

What to do if you can't log in

- Contact our SJSU IT Service Desk. There are three ways:

Phone: (408) 924-1530

Email: itservicedesk@sjsu.edu

Live Chat: go to IT website and look for chat hours.

- If email to itservicedesk@sjsu.edu, an iSupport ticket will be created for the issue.

Appointments and Class Schedule

Do your research and plan your schedule

Check your enrollment appointment on your MySJSU account by logging on to one.SJSU.edu. The MySJSU tile will appear as a "Most Popular". You can also use the one.SJSU.edu search bar to search for MySJSU. For more tutorials and guides on how to get started with one.SJSU.edu and to customize the portal, visit the IT Support site.

You will not be able to register before your appointment time, but you can enter the system, run MyProgress and MyPlanner, and research course offerings, degree requirements, course prerequisites, etc. You will not be able to register until you clear registration holds (see Registration Holds).

It is your responsibility to monitor your account to see when the appointment time is posted. Note that enrollment appointments are not mailed or emailed to students.

Create a registration worksheet before logging on

Build a sample schedule and have alternate schedules or classes prepared in the event courses are either closed or canceled. SJSU offers course listings to you in 3 ways:

1. Use MyScheduler to find the schedule options that work for you. You can import your semester plan from MyPlanner to MyScheduler and you can block out times you have work or other commitments.
2. MySJSU class schedule search function: Real-time updates of available courses (open and closed sections, seats remaining).
3. SJSU Catalog: Instructions, policies, procedures and course listings at one URL. Searchable, linked to SJSU Catalog degree templates.

4. Check out the Roadmap for your major requirements and run MyPlanner.

Course Offerings and Canceled Classes

The courses listed in the online SJSU Schedule of Classes reflect the scheduled offerings by the departments available at the publication deadline. The online schedule of classes posted at MySJSU provides real time status of classes. Departments have the option, based on enrollment, to cancel and/or add sections or courses.

Priority Groups

Current units-in-progress is used to determine class level for registration purposes. All priority groups are established per University Policy F17-4.

Group One

Specific Priority Students

Students who meet the criteria for priority registration based on University Policy F17-4.

Group Two

- Graduating seniors (bachelors-level students who have a graduation application on file with an anticipated graduation date for the current or next semester) in the California Promise program
- Graduating seniors identified as student parents
- Remaining graduating students (bachelors- and graduate-level students who have a graduation application on file with an anticipated graduation date for the current or next semester)

Group Three

- Graduate students identified as student parents
- Non-graduating graduate students based on rotating alphabetical groupings

Group Four

- Seniors in the California Promise Program
- Seniors identified as student parents
- Non-graduating Seniors based on rotating alphabetical groupings

Group Five

- Second Baccalaureate students based on rotating alphabetical groupings

Group Six

- Juniors in the California Promise Program
- Juniors identified as student parents
- All other Juniors based on rotating alphabetical groupings

Group Seven

- Sophomore and continuing Freshmen in the California Promise Program
- Sophomores and continuing first-year identified as student parents
- All other Sophomores and continuing Freshmen based on rotating alphabetical groupings

Note: First-Time Frosh registration is completed through Frosh Orientation. Incoming transfer students have a registration date dependent on when they matriculate, or their Transfer Orientation date.

Adding a Class

- Navigate to one.SJSU.edu
- Enter your SJSU ID and Password to log into MySJSU
- Follow the instructions for "How to Add a Class"

Choose the class you wish to add.

- Two ways to select a class:
 1. If you know the Class Number for the class you wish to add, you can simply type the 5 digit Class Number and click the Enter button.
 2. Click the green "Search Button." Make sure the Course Career is set to Graduate or Undergraduate depending on the class you are searching for. If you find a class you wish to add, click the "Select Class" button to place it in your shopping cart.
- Once you have chosen a class, a new page called "Class Enrollment Options" will appear. Verify that the course is the one you selected.
- If required, enter permission number (see Department or Instructor Consent below)
- Select any related component classes if applicable (see below), and click okay.
- The Add Classes page will appear, and you will see your classes in your shopping cart.

Warning: you have not yet added your classes. You must click on "Finish Enrolling" to add the class.

Component Classes

If the course has related components attached to it (e.g., lab, seminar), the system will prompt you to select the one you wish to add.

Department or Instructor Consent

- Please note that classes designated "Department Consent Required" require a Permission Number (add code). This should be requested from the instructor or from the office of the department offering the course.
- If you received a Class Permission Number, enter it in the Permission Number box after selecting your class.
- **Please note that most classes will continue to add students from the waitlist when seats become available through the seventh business day after the first day of instruction for fall and spring semesters, per University Policy F20-1.**
- **Permission Numbers (add codes) will be required for all classes starting on the eighth business day after the first day of instruction, per University Policy F20-1.**

Switching or Swapping Class Sections?

You must drop the section (lecture and labs/seminar, as well, if they have related components or corequisites) before adding the new class section(s).

The Swap class enrollment function allows you to replace an enrolled class with another open or waitlisted class. To learn more, go to FAQs for Swapping Classes.

Add Additional Classes

If you want to add another class to your add classes list, simply repeat the previous steps.

Warning: Finish Enrolling

Make sure you complete the process! Once you have added all your classes to your shopping cart, click the green button that says "Proceed to Step 2 of 3." On the next page you will be given the chance to review your enrollment and make sure that it is accurate. Once you have verified your classes, click the green "Finish Enrolling" button to submit your registration.

Verify Add

Check to make sure you did not receive any errors for the classes you added. If you did, you can see a message explaining why you could not add the class, for example, prerequisites not met, or the class is full. Finally, check your class schedule to make sure all the classes you added appear.

"Instructor Consent" or "Department Consent"

Should you receive a registration error indicating that "Instructor Consent" is required, you must go to the instructor to obtain the Permission number. To add the course, use the Permission Number with the 5-digit Class Number for that specific course section, as listed in the course schedule.

"Department Consent" requires students to go to the department that offers the course to obtain the Permission Number. To add the course, use the Permission Number with the 5-digit Class Number for that specific course section, as listed in the course schedule.

Permission numbers become 'used' only after an enrollment request is successful. To assure a successful enrollment request if you are adding using a permission number, remember the following before clicking the submit button:

- Check that you have no holds.
- Check that you have met all prerequisites.
- If you know the 5-digit class number, enter the number. If not, use "search" function and enter Course Subject e.g. SOCI and course number e.g. 101. See the guide with screenshots on how to enroll
- Enter the permission number in the permission number box
- Enter any and all Component Courses (e.g., corequisite labs or seminars) and determine what required course is approved even before trying to "Enroll in the Class."

Adding Classes on the First Day of Instruction

At the first class meeting, Group 3: Graduating Students (bachelors and graduate level students who have a graduation application on file with an anticipated graduation date for the current or next semester) shall have top priority for any available spaces. Students seeking to add the course should provide documentation showing that they are graduating seniors as defined above.

An impartial procedure (such as a lottery or any other method of random selection) shall be used to choose, from among the graduating seniors, those who will fill the available spaces. Automated waitlists will run through the first nine days of the semester for most courses. Permission numbers will be required to add courses after that date.

University Policy F20-1

Adding Classes after the Last Day to Add

- After census date, students can petition for a late add using the Post-Census Late Enrollment form, which is available on the Registrar's website.

Late Fee Assessed

Students registering for classes after census are assessed a late registration fee. Students in the Dual Enrollment (Step to College programs) are not required to pay the late registration fee.

Amount	Description
\$200.00	Begins after census for any classes added (includes Retroactive Adds - which begins the first day after instructions ends).

Waitlisting

SJSU has "waitlisting" for all classes. Waitlisting puts you in line to get a space when a class is full (closed class), should a space become available. See University Policy F20-1 for more details on the waitlist policy.

When can I sign up for waitlist?

The waitlist process runs nightly from the first day of Advance Registration through 7 business days after the first day of instruction

How do I sign up to waitlist for a class?

You may sign up for the waitlist via MySJSU. If a class is full, you may place yourself on a waitlist.

Waitlist When You Add Classes

- Log into your MySJSU and navigate to 'add classes.'
- At "Step 1, Select classes to add," search for your preferred course.
- If the class is full and the waitlist option is available, you will see the yellow waitlist icon.
- To place yourself on the waitlist, you must click the **checkbox next to "Waitlist if class is full"**.
- You will be returned to Step 1. You must complete the remaining steps of the process to add classes.
- When you finish enrolling in the class, you will see a message indicating that you are on the waitlist and your current position number on the list.
- Monitor your waitlist position by navigating to "My Class Schedule" at MySJSU.

Feedback

Problems? Questions? Comments? Contact Registrar@sjsu.edu

After the third week of Advance Registration

- The automated waitlist process adds students based on priority.
 - For details on priority go to Automated Waitlist Reprioritization
- Variable Waitlist Unit Limit applies. The Variable Waitlist Unit Limit defines the available units a student can waitlist at a given time.
 - For details on this go to Variable Waitlist Unit Limit
- There is no guarantee you will be enrolled in the class from the waitlist.
- Check your schedule regularly at MySJSU to monitor your position on a waitlist.

Registration Procedures

- You may place yourself on the waitlist if the class is already full.
- If you are already enrolled in another section of the same course, you will not be moved from the waitlist if space becomes available unless you have set up the switch as a "swap". See Swap Class Enrollment Function details.
- When you place yourself on a waitlist, you hold a position that changes as students ahead of you get enrolled in the class or drop off the waitlist.
- If students drop from a full class, students from the waitlist will be placed in the class before any student who attempts to add the class but is not on the waitlist.
- If you are moved from the waitlist into the class, you will receive a confirmation message in your MySJSU account.
- If enrolled from the waitlist, it is your responsibility to drop the class if you decide not to attend. Failure to properly drop the class will result in a "WU" grade on your record which will lower your grade point average.
- It is your responsibility to monitor your waitlist, your enrollment limit, potential time conflicts and any additional fees due.
- If you decide you no longer wish to be on the waitlist, you must drop yourself from the waitlist.

How do I move from the waitlist into the class?

Students are moved from the waitlist into the class if space becomes available, and there are no registration issues (see below). To learn more about how the waitlist works consult "How Does the Waitlist Work?".

Registration issues that may prevent you from moving from waitlist to enrollment. Check the list below "before" you put yourself on waitlist

- **Hold:** Make sure you do not have a hold on your account.
- **Prerequisites or Corequisites:** Make sure you meet all the pre/corequisites(lab or workshop), major and class level requirements. Check your MySJSU for pre/corequisites or see course descriptions in the SJSU catalog.
- **Enrollment Limit:** Check your Enrollment Limit, you may not go over your enrollment limit.
- **Time Conflict:** Make sure that you have no time conflict with a class that you already enrolled in.

- **Already enrolled in another section of the same course:** Make sure you're not already enrolled in another section of the same course.
- **Repeating a class:** If you are repeating a class, you will not be able to enroll until a later date. See repeats and grade forgiveness page for details.
- **Course with components:** You must select all desired sections (lecture, lab and seminar). Space must open in all sections.

If you have any issue above, you will be skipped over and the next student will be considered. You will not be reconsidered until the next time space becomes available in that class.

Registration Billing

- You may be added into waitlisted classes at any time which might incur additional charges. It is important to check your class schedule and amount due daily to avoid possible cancellation of all your classes for failure to pay your fees in full by your payment due date.

Dropping a Class

Go to MySJSU

- Enter your SJSU ID and Password
- If you drop a class, you must do so prior to the time you submit payment to ensure that your registration fees are properly assessed.

Navigate to "Self Service" > Student center > Drop a class"

- Click on "Drop Classes"
- Click the checkbox next to each class you wish to drop and click "Drop Selected Classes."
- Review your selection and click "Finish Dropping."
- It is the student's responsibility to make sure classes are dropped.
- More information about how to drop a class is available in this guide

Dropping Without Penalty

Courses may be dropped without academic penalty through the day before the Census date. See the Calendar section for exact dates and deadlines. Courses dropped during this initial period will not appear on the student's transcript. With instructor consent, students may late add a class up to the add deadline. Please view the pro-rata refund schedule for the appropriate semester.

Dropping Classes After Drop Deadline

Students may petition to late or retroactively drop a course or withdraw from an entire semester of courses for serious and compelling reasons after the drop deadline. Check the official academic calendar to verify the date.

Conditions and circumstances are defined as "serious and compelling" only if beyond the student's control. Those acceptable as justifications for a late drop must have occurred after the drop deadline. A personal statement with supporting documentation must be submitted with the late and retroactive drop and withdrawal petition.

Undergraduates may go to this link for information on dropping/withdrawing from class. Undergraduate petitions are done via DocuSign. Graduate students may go to this link for information on dropping/withdrawing from class. Graduate petitions are done via OnBase.

Continue attending class and complete all assignments until the petition is approved or denied.

Instructor Drops

Instructors are permitted to drop a student who fails to establish a committed presence in the class. "Establishing a committed presence" is defined in University Policy F15-3 as the following options for the student:

1. In-person classes. Attending the first class meeting or informing the instructor of the intention to continue in the class before 48 hours after the first official class meeting.
2. Online classes. Logging on to the LMS (Canvas) class shell on the first scheduled day of the class or informing the instructor of the intention to continue in the class before 48 hours after the official class start date.

Some instructors may drop students who do not meet the stated course prerequisites. However, they are not required to do so. It is the student's responsibility to make sure classes are dropped.

See Instructor Drop Procedure.

Late Drop Petitions

Students may petition to Late Drop for serious and compelling reasons after the drop deadline. To verify the official dates, see Calendar for links to the official academic calendar. Petitions are available at Undergraduate Education for undergraduates and GAPE for graduate students.

Academic Renewal

Graduating seniors with a grade point average (GPA) below 2.0 in the major, minor, SJSU, or overall college coursework, may request that all grades earned in a previous semester (or two semesters) be disregarded, to permit graduation. If the petition is approved, all grades and units earned during the semester will be disregarded when calculating GPAs for graduation, but the courses and grades will still appear on the transcript.

All of the following conditions must be met:

- You must have applied for graduation and be ready to graduate.
- You must have a GPA below 2.0 in a category required for graduation (major, minor, overall, SJSU)
- At least 5 years must have elapsed since the semester you want to disregard.
- You must have at least a 3.0 GPA in your most recent 15 units at SJSU, or 2.5 in the past 30 units, or 2.0 in the past 45 units.
- No courses or units earned during the semester you want to disregard may be counted toward graduation.
- You must document extenuating circumstances associated with the semester you want disregarded and show that your performance is not representative of your ability.

Students need to apply for Academic Renewal through the Office of Undergraduate Education.

Cancellation of Registration or Withdrawal from the Institution

Students who find it necessary to cancel their registration or to withdraw from all classes after enrolling for any academic term are required to follow the university's official withdrawal procedures. Failure to follow formal university

procedures may result in an obligation to pay fees as well as the assignment of failing grades in all courses and the need to apply for readmission before being permitted to enroll in another academic term. Information on canceling registration and withdrawal procedures is available from Exploratory Student Success Center in Administration 150.

Students who receive financial aid funds must consult with the Financial Aid Office prior to withdrawing from the university regarding any required return or repayment of grant or loan assistance received for that academic term or payment period. Students who have received financial aid and withdraw from the institution during the academic term or payment period may need to return or repay some or all of the funds received, which may result in a debt owed to the institution.

Please contact the Office of the Registrar at 408-924-5680 for more information.

Restrictions

Graduate students

Cannot enroll in lower division classes during Advance Registration. Lower division classes will need to be added starting on the first day of instruction for the term.

Matriculated SJSU students cannot concurrently enroll in Open University.

Matriculated students are those who have been admitted to SJSU as regular students for the current semester or were registered as matriculated students in at least one of the two previous semesters and did not graduate. This policy does not apply to disqualified students.

Students returning after an absence:

After an absence of more than one semester (without a formal leave of absence petition), students must reapply for admission before access to registration is granted.

Maximum Unit Load:

During the Advance Registration period a cap is placed on the maximum number of units that students can enroll in. After a specified date, the cap is raised. Students wishing to enroll in excess units must submit an Excess Units petition to their Department Chair. More information is available from the Office of the Registrar.

Repeating a Class

In accordance with University Policy, F08-2, any matriculated student who is repeating a course for the first time shall be allowed to register for the course during the Advance Registration period no earlier than approximately three weeks prior to the start of the semester. Students who have received a grade of "W" will be treated as a first-time registrant for a course. Students who are repeating a class for two or more times or have repeated more than 28 units, must submit a Petition for a Repeat Exception.

Returning After an Absence

If you are in good standing and you were not disenrolled for non-payment of fees and you choose not to enroll or "stop out" for one semester, there is no need to reapply for admission. However, in order to maintain your matriculation at SJSU, you must enroll in classes the semester immediately following the one semester you stopped out. Some examples:

- You attended a spring term, earned grades and you are still in good standing. You do not enroll in the fall term, but you must return to take classes in the following spring. You do not need to reapply for admission.

When must you reapply for admission

- You attended a fall term, earned grades and are in good standing. You do not enroll in the next spring and fall terms (absence for a full year). You must reapply for admission.
- If you are absent for two or more consecutive semesters (a full year off from school)--you must reapply for admission. Note: summer and winter sessions are not included in this policy.
- You do not enroll in classes in your initial admission term and wish to attend a subsequent term. You must reapply for admission.

How to reapply for admission

Complete the online application at Cal State Apply.

If you intend to stop out for one semester but decide to extend your absence, you may request a retroactive leave of absence under certain circumstances, before the start of the second semester away from SJSU.

First Year Course Placement - English and Mathematics/Quantitative Reasoning Supported Instruction

- All entering SJSU frosh assigned a Math enrollment category of M-II, M-III, or M-IV must enroll in a B4 (mathematics/quantitative reasoning) course during their first academic year. All entering SJSU frosh assigned a Writing enrollment category W-II, W-III, or W-IV must enroll in an A2 (written communication) course during their first academic year.
- Students required to participate in Supported Instruction in Math (M-III and M-IV) and/or Writing (W-III and W-IV) may be restricted from enrolling in certain classes for which they do not meet prerequisites. Visit the Supported Instruction website for more details.
- Students assigned to enrollment category M-IV must enroll in an appropriate B4 course in fall of their first academic year. Students assigned to enrollment category W-IV must enroll in an appropriate A2 course in fall of their first academic year. (Spring admits choosing Stretch English, which starts only in the Fall semester, may extend their A2 enrollment start date to their first fall semester.) Students in category M-IV and/or W-IV must remain continuously enrolled in B4 and/or A2 courses until these GE areas have been completed with a grade of C- or better.
- Students required to participate in Supported Instruction in Math (M-III and M-IV) and/or Writing (W-III and W-IV) who do not enroll in or who drop out of the appropriate class(es) during any registration period for fall or spring terms without the consent of an advisor in their college success center or Exploratory Student Success Center may be subject to having all courses dropped. If this occurs, students must re-register with no guarantee that classes in which they were previously enrolled will be available.
- Entering SJSU frosh who have not completed A2 or B4 within a year of first registration will be placed on Administrative Academic Probation. Entering SJSU frosh who have not completed A2 or B4 within two years of first registration may be administratively academically disqualified, pending the outcome of an appeals process. The petition to extend the deadline for GE Area A2/B4 completion can be found on the Supported Instruction website.

CSU Immunization Requirements

The CSU Immunization Requirements policy applies to undergraduate and graduate students, students matriculated in self-support degree programs, and K-12 students participating in concurrent enrollment courses entering the California State University (CSU) in or after fall 2023.

Immunization and Screening, Recommendations and Requirements are adopted from the American College Health Association (ACHA) Immunization Recommendations for College Students linked here, and the California Department of Public Health (CDPH) Immunization & Screening Recommendations for College Students linked here.

See the CSU Immunization Requirements policy for more information regarding additional authorized discretionary requirements, academic program and fieldwork or clinical placement requirements, or immunization access.

NOTE: Any revisions of the CDPH recommendations for colleges and universities as of February 1, each year, will be reflected in CSU recommendations for the subsequent fall academic term.

Exemptions

A student may be exempted from the vaccine any requirements in this policy as described below:

Medical Exemption: due to a medical condition for which an Approved Vaccine presents a significant risk of a serious adverse reaction. Any medical Exemption must be verified by a certified or licensed healthcare professional.

Religious Exemption: due to either (i) a person's sincerely held religious belief, observance, or practice, which includes any traditionally recognized religion, or (ii) beliefs, observances, or practices which an individual sincerely holds and that occupy a place of importance in that individual's life, comparable to that of traditionally recognized religions.

Required Immunization

Hepatitis B (Hep B) - Ages 18 and younger as per California law (HSC sections 120390-120390-7), enrollees who are 18 years of age or younger are required to provide proof of full immunization against the hepatitis B virus prior to enrollment. If you need further details, please consult the Student Wellness Center.

Additional requirements for SJSU University Housing and International Students:

- Measles, Mumps and Rubella
- Meningococcal conjugate (MenACWY) Vaccine
- Tuberculosis (TB) screening form (available in Student Wellness Center Patient Portal)

Immunization and Screening Recommendations

The CSU recommends that students are current for the immunizations listed below. Immunizations and screening recommendations, and immunization schedules are linked above. Campuses should link to this policy to provide students with detailed immunization and screening recommendations.

Recommended Vaccines:

- Updated mRNA COVID-19 vaccine
- Influenza Vaccine
- Measles, Mumps and Rubella (MMR) Vaccine (required for some students)

- Meningococcal Conjugate (Serogroups A, C, Y, W-135) Vaccine (required for some students)
- Serogroup Meningococcal B Vaccine
- Tetanus, diphtheria, and pertussis (Tdap) Vaccine
- Varicella/chickenpox Vaccine
- Human Papillomavirus (HPV) Vaccine

Other Vaccines Recommended for Adults

- Hepatitis A (Hep A) Vaccine
- Hepatitis B (Hep B) Vaccine - Ages 19 and older
- Human Papillomavirus (HPV) Vaccine
- Pneumococcal Vaccine
- Polio Vaccine

Recommend Screening

- Tuberculosis Screen/Risk Assessment (TB)

The above are not admission requirements but are required of students as conditions of enrollment in CSU.

Immigration Requirements for Licensure

The Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (P.L. 104-193), also known as the Welfare Reform Act, includes provisions to eliminate eligibility for federal and state public benefits for certain categories of lawful immigrants as well as benefits for all illegal immigrants.

Students who will require a professional or commercial license provided by a local, state, or federal government agency in order to engage in an occupation for which the CSU may be training them must meet the immigration requirements of the Personal Responsibility and Work Opportunity Reconciliation Act to achieve licensure. Information concerning the regulation of these requirements are available from the Registrar's Office, Student Services Center.

Registration Holds

Students should periodically check for holds at MySJSU. Follow the instructions on how to clear them.

Holds on student accounts and records will prevent students from registering. Students should periodically check for holds at MySJSU. Financial holds of \$50.00 or more will block you from registration, diplomas and other miscellaneous services

College of Engineering Advising

All College of Engineering undergraduates must see an advisor every semester, prior to registration. Graduate Engineering students (except Civil and Environmental Engineering, Computer Engineering, General Engineering, and Industrial Systems Engineering) must also see a major advisor prior to enrolling every semester.

College of Science Advising

All undergraduate College of Science majors and graduate students in Chemistry, Computer Science and Physics must see a major advisor prior to registering every semester.

Undeclared Advising Hold

All Undeclared and Undeclared-PreNursing students are required to see an advisor in the Exploratory Student Success Center prior to registering every semester.

Financial Holds

Do you have a balance due on your student account? If so, you will not be able to register until the debt has been paid. Balances can fluctuate on your student account depending on activity. Pay your outstanding balance using the Pay Now option at MySJSU (which can be accessed through the one.SJSU.edu portal). Payments are applied to the oldest balance first. Keep your account current by paying all charges by the assigned due date.

Online Title IX Training Hold

All incoming students (undergraduate and graduate) are expected to complete online Title IX training course addressing sexual assault prevention. A hold (HW1) will be placed if the course is not completed. Questions? Email titleixeducation@sjsu.edu

AlcoholEdu Hold

All incoming undergraduates are expected to complete AlcoholEdu, an online training course addressing alcohol abuse prevention. A hold (HW2) will be placed if the course is not completed. Questions? Email titleixeducation@sjsu.edu

Hepatitis B Immunization Series

- Are you a first time SJSU student?
- Will you be 18 years or younger on the first day of instruction?

If the answer to both of these questions is yes, you may be required to submit proof of full immunization or immunity against Hepatitis B.

For further details please visit the Student Wellness Center.

International Student Health Insurance

Proof of health insurance is required prior to registration each semester. For questions about this hold, please call International Student and Scholar Services (ISSS) (408) 924-5920.

Measles and Rubella

- Are you a new or readmitted SJSU student?
- Were you born on or after January 1, 1957?

If the answer to both of these questions is yes, you may be required to submit proof of full immunization or immunity against Measles and Rubella. For further details please visit the Student Wellness Center.

Missing Document Holds

If you owe documents or transcripts to the Undergraduate Admissions office, please submit by the deadline posted in your MySJSU account. You must submit final, official transcripts or official documents as instructed in your MySJSU "to do" items before you are allowed to register.

Academic Notice Holds

- Is your SJSU cumulative grade point average below 2.00 for undergraduates (3.00 for graduate students)?
- Are you on a reinstated status on academic notice?

For undergraduates, if the answer is yes to either question, you must see your major advisor or an Exploratory Student Success Center advisor before you can register. This will happen each term until you are no longer on academic notice.

Records Holds

SJSU has the authority to withhold permission to register, receive services, materials, food or merchandise, or any combination of these, from any person owing a debt to the university. A debt is defined as an unpaid obligation of a student or former student, however incurred, arising while the debtor was a student. For students who have been recipients of Federal Perkins Loan funds, SJSU has the authority to withhold certain services for failure to complete a Perkins Exit Interview upon departure from SJSU.

An automatic financial hold will be placed against the student's records whenever a student has a past due balance with the University. Read more about Assembly Bill-1313 Higher Education: prohibited debt collection practices.

Services that may be held include, but are not limited to:

- Registration
- Diploma

When all debts are cleared, the hold will be removed.

Undergraduate Policies & Procedures

Information about course credit and number, including grades, registration and attendance is found in the Policies and Procedures section of the catalog.

Academic Notice and Disqualification

University Academic Notice

An undergraduate student is placed on academic notice if the student's SJSU cumulative grade point average (GPA) falls below a "C" average (2.0). Students will remain on academic notice until they return to good academic standing (SJSU cumulative GPA greater than or equal to 2.0) or are disqualified. Undergraduate students on academic notice will have holds placed on their records and will not be allowed to participate in further registration activities until they have conferred with their academic advisor(s) to design a study plan to raise their SJSU cumulative GPA to at least 2.0 in the most expeditious manner. The registration hold will continue until the student returns to good standing.

All work taken through Open University is included in the cumulative record and is considered in the determination of academic notice and disqualification.

Unless otherwise noted, post-baccalaureate (second baccalaureate) students follow the same policies and procedures as upper-division undergraduates.

University Academic Disqualification

Undergraduate students on academic notice are subject to academic disqualification if their Fall or Spring **term GPA** falls below 2.0. First year students who have not returned to good standing (SJSU GPA of 2.0 or higher) will remain on academic notice and are not subject to disqualification until they have attempted 30 units at SJSU or have completed three semesters, whichever comes first.

An undergraduate student reinstated on academic notice must achieve a grade-point average of 2.0 or better each semester following reinstatement until such time as they have achieved a cumulative SJSU GPA of 2.0. A student who fails to do so will be disqualified again (even if this occurs prior to readmission).

Undergraduate students are eligible to repeat a limited number of courses with grades of "C-", "D+", "D", "D-", "F", "NC", "WU", or "IC" through SJSU's Open University. All work taken through Open University is included in the cumulative record and is considered in the determination of academic notice and disqualification. Graduate students should see the graduate disqualification section.

Disqualified students should also refer to the section on reinstatement.

Unless otherwise noted, post-baccalaureate (second baccalaureate) students follow the same policies and procedures as upper division undergraduates.

Academic disqualification policies were revised in University Policy S16-16 and are effective with the determination of Academic Standing at the end of the Fall or Spring semester.

Disqualified undergraduate students may enroll in Open University coursework.

Administrative-Academic Probation, Administrative-Academic Disqualification, and Disqualification from Major

Section 41300 in Title 5 of the California Code of Regulations permits administrative-academic probation or disqualification from academic programs in the CSU for unsatisfactory scholastic progress regardless of cumulative GPA. See University Policy S16-16 for details.

Administrative-Academic Probation

A student may be placed on administrative-academic probation by action of the Provost for any of the following reasons:

1. Withdrawal from all or a substantial portion of a program of studies in two successive terms or in any three terms. A student whose withdrawal is directly associated with a chronic or recurring disability or its treatment is not subject to administrative-academic probation for such withdrawal.
2. Repeated failure to progress toward the stated degree or other program objective, including that resulting from assignment of 15 units of "NC", when such failure appears to be due to circumstances within the student's control.
3. Failure to comply, after due notice, with an academic requirement or regulation which is routine for all students or a defined group of students (examples: failure to complete a required CSU or campus examination, failure to complete a required practicum, failure to satisfy GE Areas A2 and B4 by the beginning of the 2nd year, failure to comply with professional standards appropriate to the field of study, failure to complete a specified number of units as a condition for receiving student financial aid or making satisfactory progress in the academic program).

When such action is taken, the student will be notified in writing and provided with the conditions for removal from probation and the circumstances which would lead to disqualification, should probation not be removed.

Administrative-Academic Disqualification

A student who has been placed on administrative-academic probation may be disqualified from further attendance if:

1. The conditions for removal of administrative-academic probation are not met within the period specified;
2. The student becomes subject to university academic notice while on administrative-academic probation;
3. The student becomes subject to administrative-academic probation for the same or similar reason for which he or she has been placed on administrative-academic probation previously, although not currently in such status.

When such action is taken, the student will receive written notification, including an explanation of the basis for the action.

In addition, an appropriate campus administrator may disqualify a student who at any time during enrollment has demonstrated behavior so contrary to the standards of the profession for which the student is preparing as to render them unfit for the profession. In such cases, disqualification will occur immediately upon notice to the student, which shall include an explanation of the basis for the action, and the campus may require the student to discontinue enrollment as of the date of the notification.

Disqualification from Major

Each college, school, program and/or department has the option of employing a guideline for disqualification from the major. Those that opt to disqualify from the major must have published criteria for determining probation in the major, disqualification from the major, and reinstatement into the major. Such criteria may include individual course grades below "C" (2.0) or "CR", a major GPA below 2.0, or a university GPA below 2.0. Students disqualified under this guideline must be notified by the department, school or college when placed on probation in the major or disqualified by the major.

Students disqualified from their major are listed as Undeclared, report to Exploratory Student Success Center, and may do academic work to be reinstated to the major (if permitted by guideline), or change to another major for which they are qualified. Appeals may be submitted to the Academic Disqualification and Reinstatement Review Committee via the Office of Undergraduate Education.

Impacted degree programs are those most likely to have policies for disqualification in the major, but even non-impacted programs may have such policies. The Office of Undergraduate Education will maintain current information about disqualification in the major.

Catalog Rights

Undergraduate students remaining in attendance in regular sessions at any California State University campus, at any California community college, or any combination of California community colleges and campuses of the California State University may, for purposes of meeting graduation requirements, elect to meet the requirements in effect at the campus from which they will graduate either:

1. at the time the student began such attendance, or
2. at the time of entrance to the campus, or
3. at the time of graduation.

Continuous attendance is defined as enrollment in at least one semester or two quarters in each calendar year. Absence related to an approved educational leave or for attendance at another accredited institution of higher learning is not considered an interruption, providing the absence does not exceed two years. Campus authorities may authorize or require substitutions for discontinued courses and may also require students changing their major or any minor field of study to complete the major or minor requirements in effect at the time of the change. Students who do not maintain continuous enrollment will be held to any new requirements approved by the university at the time of their readmission.

Continuous Attendance and Catalog Rights

Undergraduate students acquire "catalog rights" with respect to the requirements for a degree program by maintaining continuous attendance. A student who has been enrolled either at a California community college (CCC) or in regular sessions at a CSU campus for at least one semester or two quarters of consecutive calendar years is considered to be in "continuous attendance." Once a student has established his or her "catalog rights," an absence related to an approved leave of absence or for attendance at another accredited institution of higher learning (for undergraduates only) shall not be considered an interruption, providing the absence does not exceed two years.

This concept is important because continuous attendance affects the requirements a student must meet to graduate from a CSU campus. SJSU issues a new online catalog every year, which is the official record of all the degrees and degree requirements for the programs at SJSU. These degree requirements may change from one catalog to the next.

Students who have been in continuous attendance may meet the SJSU campus graduation requirements:

1. at the time they began continuous enrollment at a CCC or other CSU campus; or
2. at the time they entered SJSU; or
3. at the time they graduate from SJSU.

By maintaining continuous attendance and selecting option (1) or (2), students can be assured that their SJSU campus graduation requirements will not change. Their right to choose one of these options is called "catalog rights." SJSU will use the matriculation term (i.e., option 2) as the initial option (default) for all students; however, students transferring from a CCC or CSU campus, who would benefit from an earlier term based on continuous enrollment, may request option (1) or (3) from their departments or the Office of the Registrar.

If a student follows an earlier version of a program in which his or her department has discontinued or modified required courses, the department may authorize appropriate substitutions. If, while enrolled, a student changes major, concentration, or minor, he or she may be required to complete the major or minor requirements in effect at the time of the change. However, he or she may continue to follow the university, General Education, and mathematics and writing requirements listed in the university catalog for which "catalog rights," are claimed.

SJSU affords graduate students the same rights as indicated above with the exception of the references to CCCs.

Change of Major/Degree Objective

Undergraduate students who wish to change their major or degree objective need to meet with their major advisor, who can initiate an Advisor Request to the Registrar's Office.

Students changing to the Undeclared Pre-Nursing major must complete the Undeclared Pre-Nursing application available on the College of Health and Human Sciences Student Success Center website.

Students cannot change into Undeclared as a major.

Students who have earned more than 90 earned units (counting no more than 70 community college transfer units) are not likely to be approved for a change of major and will need to appeal through the Undergraduate Education Office. Change of major is not guaranteed.

Classification of Students

San José State University students are classified in the lower or upper division or in graduate standing based on the units completed and program of entry. The basis of classification is as follows:

Lower Division

Freshmen are those who have earned a total of fewer than 30 semester units. Sophomores are those who have earned a total of 30 through 59 semester units.

Upper Division

Juniors are those who have earned from 60 through 89 semester units. Seniors are those who have earned 90 semester units or more. Second or Post-baccalaureate students are those possessing a recognized baccalaureate degree and enrolled in an undergraduate degree program. Unless otherwise noted, post-baccalaureate students follow the same policies and procedures as upper division undergraduates.

Graduate Standing

Graduate standing is the classification for those who possess a recognized baccalaureate degree and are enrolled in a graduate degree or credential program.

Double Major

If a student has completed the requirements for two or more majors leading to the same baccalaureate degree (e.g., two B.A. degrees or two B.S. degrees) for the same graduation application period, those majors shall be acknowledged on a single diploma and on the student's transcripts. Each major, not including courses in preparation

for the major, must consist of at least 36 units for Bachelor of Science degree majors, or at least 24 units for Bachelor of Arts degree majors, units that are completely separate and distinct from the other degree. The University has the right to restrict students from pursuing double majors, particularly when resources must be equitably distributed among all students.

Double Concentration

If a student has completed the requirements for two or more concentrations within the same baccalaureate degree (e.g., two concentrations for the same B.S. degree) for the same graduation application period, those concentrations shall be acknowledged on a single diploma and on the student's transcripts. Each concentration, not including courses in preparation for or in support of the major, generally must consist of at least 12 units that are completely separate and distinct from the other concentration. Individual degree programs may set higher limits for the number of units that are completely separate and distinct from the other concentration. Exceptions to allow two concentrations with fewer than 12 units unique to each concentration will require the approval of both the appropriate college Associate Dean and the Associate Dean for Undergraduate Education. The University has the right to restrict students from pursuing double concentrations, particularly when resources must be equitably distributed among all students. This policy does not apply to Spartan Accelerated Graduate Education (SAGE) Programs.

Graduate Credit Earned by SJSU Undergraduate Students

Per University Policy S20-3

1. Undergraduate students shall petition through their major advisor to earn graduate credit for a graduate course (200 level or higher) taken. The Petition for Undergraduate Students to Earn Graduate Credit is housed on the Undergraduate Education Student Petitions website.
2. Undergraduate students shall meet the following criteria before enrolling in graduate level courses for graduate credit:
 - a. Will have applied to graduate from their baccalaureate degree program prior to enrolling in graduate level courses;
 - b. No more than 30 units are needed to complete the baccalaureate degree at San José State University;
 - c. None of the courses to be taken for graduate credit is required for the baccalaureate degree or minor;
 - d. Normally, a grade point average of 2.75 or better on all work completed in upper division standing at San José State University;
 - e. Normally, a maximum of 16 units is attempted in the semester in which the courses for graduate credit are proposed.
3. Graduate credit will appear on the student's official transcript, but that credit does not imply admission to any graduate degree program.
4. The student may not elect to take letter-graded graduate courses as CR/NC when graduate credit is requested.
5. If a student is admitted to an SJSU graduate degree program, the maximum graduate credit earned, including through the process described within this policy, that may be transferred into the graduate program is limited to 30% of the total units of the graduate degree (per University Policy S13-8) and must be approved by the appropriate program authority.

This policy applies solely to graduate classes taken in the undergraduate program at SJSU; courses taken at other universities during the undergraduate career do not qualify for transfer into an SJSU graduate program. The only exception is that SJSU undergraduates can transfer both upper division (100-level and above) and (200-level) graduate courses from their undergraduate program into a graduate program provided that those courses transferred were not used for credit in the undergraduate degree, and students successfully petition this request to the College of Graduate Studies via their graduate program coordinator. If the student subsequently matriculates into a graduate

program at SJSU and the courses are approved by the program's graduate coordinator, the units will be transferred into the graduate career.

These policies also apply to students in second baccalaureate status. No courses taken while a student is in second baccalaureate status shall be awarded graduate credit unless the student is within 15 semester units of qualifying for award of the second baccalaureate degree and meets the criteria specified above (including enrollment in all units required for completion of the second baccalaureate degree).

It is recommended that students obtain permission for future graduate credit in writing before enrolling in the graduate classes by means of the Request for Validation of Transfer Credit form.

Minors

An undergraduate student may elect to complete a minor. Some departments require or recommend a minor as part of the undergraduate degree.

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

If a minor is completed after a degree has been granted, the minor is not recorded on the student's permanent record. Minors are only available to undergraduate students.

Double Minors

If a student has completed the requirements for two or more minors, each minor must independently satisfy the criteria for a single minor. Additionally, each minor must include a minimum of 12 units of coursework completely distinct and separate from the coursework in the other minor(s).

Open University - Courses

San José State University's Open University program permits enrollment by non-matriculated students in specified regular curriculum classes on a space available basis. Formal admission to the university is not required. Registration is not possible prior to the first class meeting. A maximum of 24 semester units may be applied toward bachelor degree with the consent of the advisor; and not more than nine units for a 30-unit master degree (30% of the degree program total) with the exception of transfers from credential programs into master's programs (40% of degree unit total allowed, i.e., 12 units in a 30 unit master's program). Units earned in Open University may not be used to meet residence unit requirements for a degree. For undergraduate students, exceptions to these restrictions may be granted by petitions.

Regular (matriculated) students in good standing may not enroll as Open University students. Matriculated students are those who have been admitted to San José State University as a regular student for the current semester or were registered as a matriculated student in the previous semester and who have not graduated.

Disqualified students who seek reinstatement following disqualification must see their advisor to develop a plan to meet the required GPA standard for readmission to the university. In addition to reinstatement, disqualified students must reapply and be readmitted in order to become regular (matriculated) students once again.

All prerequisites are enforced when enrolling through Open University.

For further information concerning Open University offerings and policies, contact Professional and Global Engagement.

International Students

International students must be regular full-time matriculated students admitted to a degree program. Enrollment in Open University does not qualify international students for the immigration document necessary to enter the United States, to transfer to SJSU from another U.S. university, or to maintain their legal F-1 status. Academically disqualified international students are eligible to enroll through Open University but must transfer to another I-20 issuing institution to maintain their F-1 student status, or apply for reinstatement to F-1 student status from the U.S. Citizenship and Immigration Services after being re-admitted to SJSU.

Summer Session

Summer Session allows both matriculated and non-matriculated (i.e., Open University) students to enroll in summer classes at San José State University. Credit earned may be applied to residence unit requirements for previously matriculated students.

For further information concerning Summer Session, contact Professional and Global Engagement.

Winter Session

Both matriculated and non-matriculated students may enroll in this session. Credit earned may be applied to residence unit requirements for previously matriculated students.

For further information concerning Winter Session, contact the Professional and Global Engagement.

Readmission - Former Students Returning (FSR)

Readmission is the process of reapplying to the next available application cycle through Cal State Apply, and it is dependent on meeting all eligibility criteria.

Those that are intending to return to SJSU whether in good academic standing or disqualified are encouraged to submit the Petition for Re-Admission as a Former Student Returning (FSR). This petition process is based upon University Policy F12-7 which outlines enrollment priorities for FSR. Former Students Returning may complete and submit this petition by the deadlines stated on the petition found on the FSR website in order to receive priority consideration for admission prior to impaction processing for the term indicated by department administration.

To be eligible to submit this petition you must:

1. Have previously enrolled at SJSU as a fully admitted and matriculated student. (Students who have completed Open University units only are not eligible.) PLEASE NOTE: Students who left SJSU due to disqualification must complete the reinstatement process prior to or concurrently with submitting this petition.
2. Submit an application and application fee for admission by the deadline to apply via CSU's Cal State Apply for the term indicated on this petition. No exceptions.
3. Meet the admission requirements as an upper (Junior) division student. Transfer requirements.
4. Complete all the required steps for admission by the published deadlines for the term indicated. For example, transcripts must be submitted, intent to enroll must be completed, orientation must be attended, etc.

The Admissions for FSR website contains the most up to date readmission information for former students returning.

Disqualified

Students disqualified at the close of their last enrollment must petition for reinstatement. See the section titled Academic Notice and Disqualification for detailed information. Students seeking reinstatement to the university are also advised to make early application for readmission and meet all application and admission deadlines posted at Cal State Apply. Contact the Office of Undergraduate Education for details, or read the Petition for Reinstatement form.

- A. Students disqualified from San José State University who wish to be considered for readmission should:
 - 1. Read the section of this catalog titled Academic Notice and Disqualification.
 - 2. Complete a Petition for Reinstatement. Petition guidelines can be found on the Office of Undergraduate Education website.

Approval for reinstatement to the University after disqualification does not ensure readmission to any particular semester or specific degree objective.

- B. Students who have been disqualified from the college or university of last attendance (other than SJSU) will not be considered for admission to a regular session until:
 - 1. They have reapplied for admission, as upper division transfers, during the next available admission application cycle and meet all posted deadlines.
 - 2. The official transcript of record indicates eligibility to re-enroll
 - 3. Former Students Returning (FSR) should complete an "FSR petition" from SJSU in addition to applying for admission. Details may be found at FSR Petition.
 - 4. Register and attend Transfer Orientation, once re-admitted and reinstated.

Academic Notice

Students on university academic notice at the close of their last enrollment may be readmitted on university academic notice as upper divisions transfers, provided they are otherwise eligible. They must meet all application and admission deadlines. Students must furnish transcripts of any college work taken during their absence.

Former Students Returning (FSR) should complete an "FSR petition" from SJSU in addition to applying for admission. Details may be found at FSR Petition.

Good Standing

Undergraduates in good standing at the close of their last enrollment may be readmitted as upper division transfers provided they are otherwise eligible. They must meet all application and admission deadlines. All students must furnish transcripts of any college work taken during their absence.

Former Students Returning (FSR) should complete an "FSR petition" from SJSU in addition to applying for admission. Details may be found at FSR Petition.

Residency

Determination

University requirements for establishing residency are independent from those of other types of residency, such as for tax purposes, or other state or institutional residency. These regulations were promulgated not to determine whether a student is a resident or nonresident of California, but rather to determine whether a student should pay tuition on an in-state or out-of-state basis. A resident for tuition purposes is someone who meets the requirements set forth in the Uniform Student Residence Requirements. These laws governing residence for tuition purposes at the

California State University (CSU) are California Education Code sections 68000-68085, 68120-68134, and 89705-89707.5, and California Code of Regulations, Title 5, Subchapter 5, Article 4, sections 41900-41916. This material can be viewed on the Internet by accessing the CSU's General Counsel Resources web page.

Each campus's Registrar's Office is responsible for determining the residency status of all new and returning students based on the Application for Admission, Residency Questionnaire, and, as necessary, other evidence furnished by the student. A student who fails to submit adequate information to establish eligibility for resident classification will be classified as a nonresident.

Generally, establishing California residency for tuition purposes requires a combination of physical presence and intent to remain indefinitely. An adult who, at least 366 days prior to the residence determination date for the term in which enrollment is contemplated, can demonstrate both physical presence in the state combined with evidence of intent to remain in California indefinitely may establish California residency for tuition purposes. A minor normally derives residence from the parent(s) with whom they reside or with whom they most recently resided.

Evidence demonstrating intent may vary from case to case but will include, and is not limited to, the absence of residential ties to any other state, California voter registration and voting in California elections, maintaining California vehicle registration and driver's license (or California identification card), maintaining active California bank accounts, filing California income tax returns and listing a California address on federal tax returns, owning residential property or leasing an apartment where permanent belongings are kept, maintaining active memberships in California professional or social organizations, and maintaining a permanent military address and home of record in California.

Nonresident students seeking reclassification are required to complete a supplemental questionnaire that includes questions concerning their financial independence. Financial independence is required, along with physical presence and intent, to be eligible for reclassification. Financial independence is established if in the calendar year the reclassification application is made and in any of the three calendar years preceding the reclassification application the student:

- has not and will not be claimed as an exemption for state and federal tax purposes by his/her parent;
- has not and will not receive more than seven hundred and fifty dollars (\$750) per year in financial assistance from his/her parent; and
- has not lived and will not live longer than six (6) weeks in the home of his/her parent.

A nonresident student who has been appointed as a graduate student teaching assistant, a graduate student research assistant, or a graduate student teaching associate on any CSU campus and is employed on a 0.49 or more time basis is exempt from the financial independence requirement.

Non-citizens establish residence in the same manner as citizens, unless precluded by the Immigration and Nationality Act from establishing domicile in the United States.

Exceptions to the general residence requirements are contained in California Education Code sections 68070-68085 and California Code of Regulations, Title 5, Subchapter 5, Article 4, sections 41906-41906.6, and include, but are not limited to, members of the military and their dependents, certain credentialed employees of school districts and most students who have attended three or more years of high school in California and graduated from a California high school or attained the equivalent of graduation. Whether an exception applies to a particular student cannot be determined before the submission of an application for admission and, as necessary, additional supporting documentation. Because neither campus nor Chancellor's Office staff may give advice on the application of these laws, applicants are strongly urged to review the material for themselves and consult with a legal advisor.

Appeals

Students whose request for residency has been denied may appeal a final campus decision within 30 days of notification by the campus. For more information please visit the Residency website from the Chancellor's Office.

Residency Determination Dates

At San José State University, the residence determination dates are:

Fall - September 20
Spring - January 25
Summer - June 1

At San José State University, the application deadlines are:

Fall - October 1
Spring - March 1
Summer - July 1

The Office of General Counsel can either decide the appeal or send the matter back to the campus for further review.

Students incorrectly classified as residents or incorrectly granted an exception from nonresident tuition are subject to reclassification as nonresidents and payment of nonresident tuition in arrears. If incorrect classification results from false or concealed facts, the student is subject to discipline pursuant to Section 41301 of Title 5 of the California Code of Regulations.

Resident students who become nonresidents, or who no longer meet the criteria for an exception, must immediately notify the Registrar's Office.

Changes may have been made in the rate of nonresident tuition and in the statutes and regulations governing residence for tuition purposes in California between the time this information is published and the relevant residence determination date. Students are urged to review the statutes and regulations stated above.

Reinstatement

Reinstatement of Undergraduate Students After Academic Disqualification

Reinstatement is a different process from readmission. Readmission of a disqualified student is not possible unless reinstatement has been approved, but students must note that reinstatement is not readmission nor does it guarantee readmission. There may even be some situations in which reinstatement is sought with no intention of reapplying to SJSU, such as for admission to another institution or program.

In most situations, students will need to apply for readmission prior to being reinstated. All returning students must submit an application for admission to SJSU. Reapply for the next available term at Cal State Apply by the published deadline. If you miss the deadline for your desired term, you will need to submit an application for the next available term. The major listed on your application must match the major on the Petition for Reinstatement. If the majors differ, the major listed on your application will be changed to reflect the major listed on the Petition for Reinstatement. For more information regarding Readmission, see Readmission - Former Students Returning (FSR).

Categories for Reinstatement

1. SJSU cumulative GPA 2.0 or better. This category is for disqualified students who have attended SJSU through Open University and brought their SJSU cumulative GPA up to 2.0 or better. Raising the GPA to 2.0 or better does not guarantee that a department will approve the petition. Many departments place restrictions on reinstatement to their major degree programs. Please consult with your major advisor(s) as early as possible.
2. Extenuating Circumstances. Reinstatements in this category will only be granted for serious and compelling reasons that were clearly beyond a student's control. Generally, extenuating circumstances fall into one of

the following eight categories: administrative error, employment, military, natural disaster, death of an immediate family member, personal health or serious family illness, divorce, or personal/other. The following are not valid reasons for reinstatement under this category: Poor academic performance, non-attendance, change of major, or lack of prerequisite(s). In addition to the required documentation of extenuation, approvals will require demonstration that poor performance in a particular semester was atypical.

3. Special Consideration. This category is reserved for students whose petitions cannot be accommodated within the other categories. Typically, such students have spent substantial time away from SJSU since their disqualification (five years or more) and feel that their life experiences have prepared them for a successful return to school.
4. Petitioned Grade Change. This category is reserved for changes of grade approved under Section III (Grade Appeal) and Section IV (Change of Grade) of University Policy S09-7. If you are petitioning under this category, you must clearly explain which course grade was changed, when it was changed, and the reason for the change.

Reinstatement Petition Deadlines and Processing

Petitions for Reinstatement are accepted and evaluated on an ongoing basis. Allow at least fifteen business days for processing after submitting the completed petition form to the Registrar's Office. You may petition under more than one category, but if you do so, your personal statement and documentation must support each category you have selected. Your petition will not be processed if you are not using the current form.

Second or Additional Baccalaureate Degree

Effective Fall 2011: Post-baccalaureate students who have earned a first baccalaureate from a regionally accredited U.S. college or university, the second or additional baccalaureate degree will be awarded when the student has filed for graduation with Office of the Registrar and a graduation check determines that all major requirements have been satisfied. For such students, residence, university, GE, American Institutions, and PE requirements normally associated with first baccalaureate degrees are not applicable to second or additional baccalaureate degrees.

Due to enrollment restrictions and impaction, SJSU no longer accepts applications from post-baccalaureate/second baccalaureate students. The only exception is for Nursing.

For post-baccalaureate students who have earned a first baccalaureate from an institution that is not a regionally accredited U.S. college or university, the second or additional baccalaureate degree will be awarded when the student has filed for graduation with Office of the Registrar and a graduation check determines that all university requirements have been satisfied. To be eligible for the degree, students must complete all coursework which constitutes the second or additional degree in at least two additional semesters with a minimum of 30 units of work beyond the first degree in accordance with the minimum residence requirement. Second or additional baccalaureate degree candidates must meet the academic regulations required of all undergraduate students, including the residency requirement (30 units in residence, 24 of which must be upper division, 12 in the major and 9-12 in SJSU Studies).

Coursework completed in the second or additional baccalaureate degree status will be classified as undergraduate work. Students cannot pursue a graduate degree objective and a second or additional baccalaureate degree at the same time at the university.

Interdisciplinary Studies

The courses offered by the Office of Undergraduate Education under University Studies (UNVS) promote leadership, integrated and applied interdisciplinary academic experiences for students.

The office also sponsors undergraduate degrees as Interdisciplinary Studies, which is an individually designed course of study leading to a BA or BS degree. The Interdisciplinary Studies degree is designed for situations in which an existing university-level SJSU undergraduate degree major does not adequately accommodate academic or professional aims. Students who complete the Interdisciplinary Studies degree shall be able to demonstrate the characteristics of "intentional learners" who can adapt to new environments, integrate knowledge from different sources, and continue learning throughout their life.

Interdisciplinary Studies is an individually designed, interdisciplinary course of study leading to a BA or BS that gives a student who has a specific educational objective the opportunity to accomplish that goal. It is not to be used to bypass normal graduation requirements or projected programs of the University, nor to substitute for a major in which a student is having academic difficulty.

The proposed course of study must be a coherent program organized around an academic theme. Students who complete the Interdisciplinary Studies degree shall be able to demonstrate: "the ability to analyze an issue or problem, integrating at least two disciplinary perspectives." In addition, students identify two or more student learning outcomes related to their specific areas of study in consultation with a major faculty advisor. They demonstrate their attainment of the learning outcomes through a portfolio or senior project completed in a capstone course.

Applicants must have both a cumulative and SJSU GPA of at least 2.75 and have sixty units (upper division standing) and at least one year of academic work still to be completed to meet minimum degree requirements. Interdisciplinary Studies degrees are considered on a case-by-case basis. Approval is based on the academic merit of the proposed course of study, the applicant's proposed rationale and potential for successful completion of the program, and the ability of the university to support the proposed program. Students apply for consideration for the Interdisciplinary Studies degree through the Office of Undergraduate Education, ADM 159.

For more information visit Undergraduate Education's Interdisciplinary Studies web page.

Time Limit

Courses taken to meet degree requirements at San José State University are subject to a time limitation of 10 years. Students are required to meet those requirements in the major in effect no earlier than 10 years prior to receiving the degree. Students with an unusual problem may petition the major department chair for a waiver of the 10-year requirement.

Graduate students should refer to the section on Graduate Degree - Time Limits.

Facilitating Graduation

Any undergraduate or graduate student will be precluded from enrolling in any additional state-supported courses when that student has already met all necessary requirements for the degree for which that student is matriculated. Moreover, students who have met all requirements for graduation prior to any semester in which they are enrolled will be permitted to drop all courses for which they are registered, with little or no penalty, and to graduate at the next available date. Students who have earned more than enough units to graduate but have some remaining requirements to complete, will be advised and precluded from registering in any courses other than those required for a timely graduation.

Undeclared Majors

The university accepts freshmen who are not ready to declare a major academic objective or who do not meet impaction criteria for their desired major objective into the undeclared category.

Students selecting the undeclared category for admission must declare a degree major objective prior to attaining junior standing (earning 60 units). Students must obtain prior approval from the department in which they ultimately choose to major in accordance with university regulations.

Students who are in doubt about their degree program are encouraged to seek assistance from the Exploratory Student Success Center in Administration 150. The Exploratory SSC serves as the major department for Undeclared students and requires advising every semester. Exploratory SSC also serves as the major department for Undeclared-PreNursing students.

Staff and resources are also available in the Career Center to support major and career exploration.

Undeclared students should report to the Exploratory Student Success Center in Administration 150 for General Education and other academic advisement aimed at discovering an appropriate major degree program.

Units from 4-Year Colleges/Universities

At least 50 of the total units required for graduation with a bachelor's degree must be earned from 4-Year Colleges/Universities. This is commonly referred to as a maximum of 70 units of Community College academic work that may count toward the minimum 120 units needed for all baccalaureate degrees.

Undergraduate University Graduation Requirements

To Qualify for an Undergraduate Degree

The University offers the following undergraduate (or baccalaureate) degrees: Bachelor of Arts (BA), Bachelor of Science (BS), Bachelor of Music (BM), and the Bachelor of Fine Arts (BFA). View the Undergraduate Graduation Requirements Unit Overview. Students must satisfy the specific degree requirements for their undergraduate major and fulfill the following University degree requirements:

1. Academic
2. General Education (GE)
3. American Institutions (AI)
4. Graduation Writing Assessment Requirement (GWAR)
5. Physical Education (PE)
6. Units in Residence
7. Upper Division Units
8. Undergraduate Policies & Procedures
9. Apply for Graduation

Information about the Commencement Ceremony and Conferral of the Degree

University Graduation Requirements earning goals and outcomes are included in the Mission and Institutional Learning Goals section of the catalog. Exceptions for University Graduation Requirements, including exemptions and waivers, are approved for specific majors and on a case-by-case evaluation only. Students may submit a University Graduation Requirement petition to the Office of Undergraduate Education.

1. Academic

An "All College" average of "C or better" (2.0), a "C or better" average earned in all units taken at SJSU (as indicated on the transcript by "SJSU Cum"), a "C or better" average in both the requirements for the major and the minor (if applicable), a "C- or better" in each of the four GE basic skills courses (Areas A1, A2, A3, and B4), a "C- or better" in Ethnic Studies (GE Area F), and a "C or better" in Writing in the Disciplines (100W/GWAR), are required for graduation with a baccalaureate degree. Upon the completion of their programs, credential candidates must have a GPA of 3.0 or higher to be recommended for a credential.

A minimum of 120 semester units of credit must be earned for graduation with the baccalaureate degree. Normally, **no more than four units** of Individual Studies (180) and/or Directed Reading (184) may count for the baccalaureate degree. Exceptions must have approval from the major department.

All requirements listed here may be met either by passing external examinations (Advanced Placement (AP) Exams, College Level Exam Program (CLEP), or International Baccalaureate (IB)), waiver examinations, where available, or through the Credit for Prior Learning process, or by coursework. Students should note that success in a waiver examination satisfies a requirement but does not yield unit credit. For information about the examinations, contact the SJSU Testing Office.

Any additional academic requirements are specified on the undergraduate major catalog pages.

2. General Education (GE)

SJSU's General Education Program establishes a strong foundation of versatile skills, fosters curiosity about the world, promotes ethical judgment, and prepares students to engage and contribute responsibly and cooperatively in a multicultural, information-rich society. General education classes integrate areas of study and encourage progressively more complex and creative analysis, expression, and problem solving. The program aims to equip

students with the knowledge, skills, and values they need for a lifetime of intellectual and personal growth. Review the learning goals and outcomes, policies, academic advisement information, and previous requirements.

3. American Institutions (AI)

The American Institutions requirement is based on the premise that any student graduating from the CSU should have an understanding of the history and governmental institutions of the United States and the State of California. This requirement, which was put in place by the State of California, is laid out in California State University Executive Order 1061. The original mandate appears in the State Education Code Title 5, Section 40404. Students may complete waiver exams or coursework to satisfy the requirements. Consult the Testing Office for information about the waiver examinations. Students should consult an academic advisor to determine which of the various course combinations are best for their undergraduate major.

Courses in American Institutions should meet one or more of the following requirements: U.S. History, U.S. Constitution, and California Government. Students enrolled in these courses should develop civic skills, interests, and values through exposure to diverse perspectives on the historical events and political processes that have shaped the social, economic, and political systems in which they live.

Students should be able to apply their values, skills, and knowledge of the historical development of the United States, American institutions and ideals, and the processes of state and local government to multicultural, community, and environmental interests.

US123 Requirements (6-12 units)

Courses satisfy General Education Requirements as specified by the Course Note Abbreviations in parentheses.

U.S. History + U.S. Constitution + California Government (US123)

All of these sequences satisfy General Education Requirements listed in parentheses. All courses in the sequence must be completed to satisfy the requirement.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

American Studies (6 units)

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)

Asian American History (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

American History Only (US1)

- HIST 20A - History of the American People 3 *unit(s)* (US1)
- HIST 20B - History of the American People 3 *unit(s)* (US1)
- HIST 170 - Topics in American History 3 *unit(s)* (US1)

U.S. Constitution + California Government Only (US23)

- POLS 1 - American Government 3 *unit(s)* (US23)

California Government Only (US3)

- HIST 189A - California History to 1900 4 *unit(s)* (US3)
- HIST 189B - California History Since 1900 4 *unit(s)* (US3)
- POLS 102 - State Government and Politics 4 *unit(s)* (US3)

4. Graduation Writing Assessment Requirement (GWAR)

The CSU Graduation Writing Assessment Requirement (GWAR) states that all students must demonstrate competency in writing skills as a requirement for graduation. Effective Fall 2023, University Policy S19-3, Amendment B, the Writing Skills Test (WST) is no longer required as a prerequisite for enrolling in Writing in the Disciplines (100W) courses.

Satisfy the GVAR Requirement

All undergraduate students must satisfy the GVAR by *either*:

1. Passing a Writing in the Disciplines (100W) course with a "C or better" (C- not accepted). View a list of Writing in the Disciplines - 100W Courses,
or
2. Satisfying the GVAR while matriculated at another CSU campus,
or
3. For students who took the WST before the Fall 2023, earning a waiver score on the WST. This applies only in majors that permitted a waiver score before Fall 2023 (See 2022-2023 catalog for previous GVAR requirements).

Students should consult with their major advisors or the Exploratory Student Success Center for major-specific advice to satisfy this requirement. Graduate students should refer to the Graduate Policies - Graduation Writing Assessment Requirement (GVAR) section.

Writing in the Disciplines Courses (3 units)

Writing in the Disciplines (WID) courses develop students' abilities to communicate effectively in their major course of study and in their careers. With an emphasis on critical thinking, these upper-division core courses advance students' understanding of the genres, audiences, and purposes of college writing while preparing them for successful communication in their chosen professions.

Minimum Prerequisite: Upper division standing; A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE. Completion of the UDW-DSP is strongly recommended.

Minimum Grade: A minimum grade of "C" or better (C- not accepted).

- AFAM 100W - Writing Workshop 3 unit(s)
- AMS 100W - Writing in the Humanities & Interdisciplinary Arts 3 unit(s)
- ANTH 100W - Writing Workshop 3 unit(s)
- ART 100W - Writing Workshop: Fine Arts 3 unit(s)
- BIOL 100W - Scientific Communication Workshop 3 unit(s)
- CHAD 100W - Writing Workshop 3 unit(s)
- CHEM 100W - Writing Workshop: Chemical Communications 3 unit(s)
- COMM 100W - Writing Workshop: Writing for Influence 3 unit(s)
- CS 100W - Technical Writing Workshop 3 unit(s)
- DSGN 100W - Writing Workshop: Design 3 unit(s)
- ECON 100W - Writing Workshop: Economic Reports 4 unit(s)
- ENGL 100W - Writing Workshop 4 unit(s)
- ENGL 100WB - Written Communication: Business 3 unit(s)
- ENGR 100W - Engineering Reports 3 unit(s)
- ENVS 100W - Environmental Research and Writing 3 unit(s)
- FORL 100W - Writing Workshop 3 unit(s)
- FS 100W - Forensic Science Writing Workshop 3 unit(s)
- GEOG 100W - Writing Workshop 3 unit(s)
- GLST 100W - Writing Workshop 3 unit(s)
- HIST 100W - History Writers' Workshop 3 unit(s)
- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 unit(s)
- JS 100W - Writing Workshop 3 unit(s)

- KIN 100W - Writing Workshop 3 *unit(s)*
- LLD 100W - Writing Workshop 3 *unit(s)*
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)*
- MCOM 100W - Writing Workshop: Mass Communications 3 *unit(s)*
- METR 100W - Writing Workshop: Meteorological Reports 3 *unit(s)*
- MUSC 100W - Written Communication II 3 *unit(s)*
- NUFS 100W - Writing Workshop 3 *unit(s)*
- NURS 100WE - Evidence Based Practice Writing Workshop 3 *unit(s)*
- PH 100W - Writing Workshop 3 *unit(s)*
- PHYS 100W - Methods of Research and Communication in Physics 3 *unit(s)*
- POLS 100W - Writing Workshop 3 *unit(s)*
- PSYC 100W - Writing Workshop 3 *unit(s)*
- RECL 100W - Writing Workshop 3 *unit(s)*
- RELS 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)*
- SCWK 100W - Writing Workshop 3 *unit(s)*
- SOCI 100W - Writing Workshop 3 *unit(s)*
- TA 100W - Writing Workshop: Theatre Arts 3 *unit(s)*

5. Physical Education (PE)

All undergraduate students who matriculate at SJSU, except those students in majors that are exempt (see Exceptions for University Graduation Requirements), are required to complete two units of activity courses that satisfy the Physical Education requirement (University Policy S14-11). Students may satisfy this requirement by either:

1. taking two distinct 1-unit activity courses (may include 2 units of Intercollegiate Athletics courses), or
2. taking one single activity course of 2-or-more units.

Veterans who have completed at least one year of active duty in the armed services (Army, Navy, Air Force, Marines, Coast Guard or Space Force) have satisfied the physical education requirement (Credit for Military Training in Non-Collegiate Settings section). Activity courses at SJSU are not repeatable for credit, unless indicated in the course description. KIN 1 - Adapted Physical Activities, specifically designed to accommodate individuals with disabilities, is repeatable for credit with instructor consent. To petition a course to satisfy the Physical Education Requirement, students must submit a petition to the Office of Undergraduate Education, who will consult with the Department of Kinesiology, at least one semester prior to graduation.

6. Units in Residence

For all bachelor's degrees, a **minimum of 30 units** shall be **earned in residence** after matriculation at the campus granting the degree. A **minimum of 24 units** shall be **upper division**. Of these upper division units, a **minimum of 12 units** shall be in the major. Extension credit or credit by evaluation shall not be used to fulfill any of the thirty (30) units in residence. Summer and Winter Session for previously matriculated students earns residence credit; Open University units are not applicable toward the residence requirement.

7. Upper Division Units

A **minimum of 40 of the total units** required for graduation with the bachelor's degree must be upper division. For the **BA**, a **minimum of 12 units of upper division credit** in the major is required and for the **BS**, a **minimum of 18 units of upper division credit** in the major is required. Upper division credit will be allowed by the university and

applied toward the baccalaureate degree only for SJSU courses numbered 100 or above and for courses from other universities clearly designated as junior or senior level courses.

8. Undergraduate Policies

All Undergraduate Policies & Procedures apply to students seeking to earn a baccalaureate degree.

9. Apply for Graduation

- You should apply for graduation at least two semesters in advance, after completing at least 85 semester units (must be in good standing). See major for specific graduation course and unit requirements.
- File your application no later than the Processing Deadline dates. Submitting your application by the priority processing deadline allows us to review your graduation requirements before Advance Registration ends for your last term of attendance.
- MyProgress is used to evaluate completion of undergraduate degree requirements. Please work with your advisor to ensure that MyProgress accurately reflects all of your coursework and test credit.
- All courses and requirements must be completed by the date of graduation and transcripts received within one month after graduation. Any Incomplete (I) or Report Delayed (RD) grade must be cleared before your degree can be awarded. Once your degree has been posted, no grade changes will be made to your record.
- If you are unable to complete the coursework, or if the date of graduation is delayed, a "Graduation Date Change Form" must be submitted to the Registrar's Office.

Apply by the priority processing deadline dates. Applications will continue to be accepted up to the last day to add classes for the term of graduation; however, delays may occur in the initial and final evaluation of your application and names may not appear in the commencement book if application is received after the priority processing deadline. If we receive your application after the final deadline date for the term for which you are applying, your application will automatically be set up for the next available graduation date. See the Graduation page for further guidance.

Graduation Application Process

Candidates for the baccalaureate degree must file an application for graduation at least two semesters prior to the expected graduation date in order to allow time to make up any deficiencies or correct any discrepancies that may delay graduation. **At least 85 semester units** must be completed before an application for graduation may be submitted. In addition to fulfilling curricular graduation requirements, a student, to be eligible for a bachelor's degree, must have a **grade point average of at least 2.0 (C)** in each one of the following categories:

1. all college work (the overall average),
2. all units attempted at SJSU,
3. all units in the major, and
4. all units in the minor (if any).

Undergraduate students need to check with their major departments or their college success centers when they are ready to apply for graduation. For guidance see the Application for Graduation web page.

The graduation application for Master's or doctoral degrees is available to eligible students through their MySJSU account. Eligible students will be messaged once they are eligible to apply online. A tutorial and video instructions for completing the application are available on the GAPE Graduation website under Online Graduation Application.

Those planning to attend a college or university other than SJSU during the final semester must notify the Office of the Registrar. Courses must be completed by the date of graduation and transcripts received within one month after graduation.

If a candidate is unable to complete the coursework as expected, or if the date of graduation is to be delayed for any reason, a Change of Graduation Date form must be submitted, accompanied with the fee, prior to the new expected graduation date.

Commencement Ceremony and Conferral of the Degree

Degrees are conferred three times a year - in August, December and May - at the close of summer, fall and spring terms. The date of the diploma reflects the term during which the degree requirements were completed. **There are two graduation or commencement ceremonies each academic year, held at the close of the spring and fall semesters.** Students who have completed all requirements in the previous summer and fall semester, or expect to complete their degree requirements in the spring semester, are eligible to participate.

Undergraduate Admissions

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Admission Procedures and Policies

Requirements for admission to San José State University are in accordance with Title 5, Chapter 1, Subchapter 3, of the California Code of Regulations. Complete information is available on the California State University website.

All CSU applications must be submitted online on the Cal State Apply website. An acknowledgment will be sent to the applicant when the online application has been submitted.

Importance of Filing Complete, Accurate, and Authentic Application Documents

San José State University advises prospective students that they must supply complete and accurate information on the application for admission, residency questionnaire, and financial aid forms. Further, applicants must, **when requested**, submit authentic and official transcripts of all previous academic work attempted. Failure to file complete, accurate, and authentic application documents may result in denial of admission, cancellation of registration or academic credit, suspension, or expulsion (Section 41301, Article 1.1, Title 5, California Code of Regulations).

Undergraduate Application Procedures

Prospective students applying for part-time or full-time undergraduate programs of study must submit a completed undergraduate application. The \$70 nonrefundable application fee should be paid online at the time of application via credit card or PayPal and may not be transferred or used to apply to another term. An alternate major may be requested on the application if desired by the university. The applications of persons denied admission to an impacted university may be redirected to another university at no cost, but only if the applicant is CSU eligible.

Impacted Programs

The CSU designates programs as impacted when more applications from regularly eligible applicants are received in the initial filing period (October and November for fall terms, June for winter terms, August for spring terms, February for summer terms) than can be accommodated. Some programs are impacted at every university which they are offered; others are impacted only at a few universities.

Candidates for admission must meet all of the university's specified supplementary admission criteria if applying to an impacted program or university.

The CSU will announce during the fall filing period those CSUs or programs that are impacted. Detailed information on university and program impaction is available on the Access & Impaction Website.

Each university will communicate supplementary admission criteria for all impacted programs to high schools and community colleges in their application service area and will disseminate this information to the public through appropriate media. This information will also be published on the San José State University's website.

Applicants must file applications for admission to an impacted program during the initial filing period. Applicants who wish to be considered for impacted programs at more than one CSU should file an application at each university for which they seek admission consideration.

Supplementary Admission Criteria

Each university with impacted programs or class-level admission categories uses supplementary admission criteria in screening applicants. Supplementary criteria may include rank-ordering of freshman applicants based on the combination of student's "A-G" GPA and supplemental factors or rank-ordering of transfer applicants based on verification of the Associate in Arts for Transfer (AA-T) or Associate in Science Transfer (AS-T) degrees, the overall transfer grade point average (GPA), completion of specified prerequisite courses and a combination of campus-developed criteria. Applicants for freshman admission to impacted universities or programs may need to have a higher "a-g" GPA. In no case will standardized test scores be utilized in making freshman admission decisions. Details about the factors used to evaluate applicants for admissions can be found on the SJSU Admissions website. Applicants who wish to be considered for admission to SJSU as an upper division transfer must complete SJSU's supplemental application. Details regarding the supplemental application process are posted to SJSU Admissions.

The supplementary admission criteria used by individual CSUs to screen applicants are made available by the universities to all applicants seeking admission to an impacted program.

Application Filing Periods

Note: Not all terms/programs are open for admission.

Terms	Applications First Accepted	Initial Filing Period	Filing Period Duration
Fall Semester	October 1	October 1 - November 30	Each non-impacted university accepts applications until capacities are reached. Many universities limit undergraduate admission in an enrollment category due to overall enrollment limits. If applying after the initial filing period, consult the university admission office for current information.
Spring Semester	August 1	August 1 - 31	

Admission to San José State is competitive in all majors because SJSU continues to have more qualified applicants than available new student spaces. This situation is called "impaction" and it means that meeting the minimum California State University (CSU) requirements does not guarantee admission to SJSU. We will no longer have the enrollment capacity to accept all CSU eligible applicants, including some from local high schools and community colleges.

San José State gives preference in the competitive admission process to "local" applicants. For freshmen, you are considered a "local" applicant if you will graduate from a high school in Santa Clara County. For transfer applicants, you are considered a "local" applicant if you will earn the majority of your transferable units at a college located in Santa Clara or Santa Cruz county.

All applicants are strongly encouraged to apply to an alternative campus that offers your preferred major. If applying after the initial filing period, consult SJSU Admissions for current information. Similar information is conveniently available at Cal State Apply.

Application Acknowledgment

On-time applicants may expect to receive an email acknowledgment from the universities to which they have applied within two to four weeks of filing the application. The notice may include a request that applicants submit additional records necessary to evaluate academic qualifications. Applicants may be assured of admission if the evaluation of relevant qualifications indicates that applicants meet CSU admission requirements, and in the case of admission impaction, supplemental criteria for admission to an impacted program. Unless specific written approval/confirmation is received, an offer of admission is not transferable to another term or to another university.

About a week after applying at Cal State Apply, you will receive an email with your nine-digit SJSU ID included. This nine-digit number will be your primary university identification throughout your career at SJSU. Make sure the spam filters on your email account are set to accept emails from @sjsu.edu.

For more information regarding the process go to SJSU Admissions.

Hardship Petitions

At the present time, because of severe budget limitations and the resulting campus-wide impaction, SJSU does not accept hardship petitions.

Notification

The Office of Undergraduate Admissions normally begins sending acceptance letters to applicants in February for admission to the fall semester and beginning in late September for admission to the spring semester. Letters from departments or faculty do not constitute admission to the university.

Applicants are not admitted as students in the regular session of the university until they have received an official letter of admission from the Office of Undergraduate Admissions. In addition to the official letter of admission, International student applicants for F-1 and J-1 status will be issued the appropriate form I-20 or DS-2019 for immigration processing.

Reservation

The university reserves the right to select its students and deny admission to the university or any of its programs as the university, in its sole discretion, determines admission based on an applicant's suitability and the best interests of the university.

California Promise

The California Promise Program enables a specific number of CSUs to establish pledge programs for entering first-time students who are both interested and able to complete baccalaureate degrees in 4-years. All CSUs have established programs for students with Associate Degrees for Transfer from any California Community College to complete their baccalaureate degrees in 2-years. The program is limited to students who are residents of California.

Students who commit to enter either the four-year or two-year pledge will be given a priority registration appointment for each state-supported enrollment period and will be provided with routine and thorough academic advisement. In order to remain in the program, students must meet with their advisors as prescribed, develop an enrollment plan and complete 30 semester units or the quarter equivalent within each academic year, including summer. Students must have started Fall 2017 or later, fill out the SJSU pledge form, and have a two or four-year plan in place in MyPlanner. Complete the Pledge Form to opt in to the program through the "To Do List" task on your MySJSU. Interested students entering the CSU in the fall term should contact californiapromise@sjsu.edu or visit the Cal State California Promise website.

Other Applicants

Fully matriculated students enrolled at any CSU campus have access to courses at other CSU campuses on a space-available basis unless those campuses/ programs are impacted. This access is offered without students being required to be formally admitted to the host campus and in most cases without paying additional fees. Students should consult their home campus academic advisors to determine how such courses may apply to their specific degree programs before enrolling at the host campus.

CSU Fully Online Courses - Matriculated students in good standing may request enrollment in one course per term, offered by a CSU host campus. Enrollment requests will be granted based on available space, as well as completion of any stated prerequisites. Credit earned at the host campus is electronically reported to the student's home campus to be included on the student's transcript at the home campus.

CSU Visitor Enrollment - Matriculated students in good standing enrolled at one CSU campus may enroll at another CSU campus for one term. Credit earned at the host campus is reported at the student's request to the home campus to be included on the student's transcript at the home campus.

Intersystem Cross Enrollment - Matriculated CSU, UC, or community college students may enroll on a "space available" basis for one course per term at another CSU, UC, or community college and request that a transcript of record be sent to the home campus.

Alternative Admissions for Adult Students

As an alternative to regular admission criteria, an applicant who is 25 years of age or older may be considered for admission as an adult student if they meet all of the following conditions:

- Possesses a high school diploma (or has established equivalence through either the General Educational Development or California High School Proficiency Examinations).
- Has not been enrolled in college as a full-time student for more than one term during the past five years.
- If there has been any college attendance in the last five years, has earned a 2.00 GPA or better in all college work attempted.

Consideration will be based upon a judgment as to whether the applicant is as likely to succeed as a regularly admitted freshman or transfer student and will include an assessment of basic skills in the English language and mathematical computation.

Appeal of Admission Decision

Section 89030.7 of the California Education Code requires that the CSU establishes specific requirements for appeal procedures for a denial of admission. Each CSU must publish appeal procedures for applicants denied admission to the University. The procedure is limited to addressing university decisions to deny an applicant admission to the University.

Admissions appeal procedures must address the basis for appeals, provide 15 business days for an applicant to submit an appeal, stipulate a maximum of one appeal per academic term, provide specific contact information for the individual or office to which the appeal should be submitted, and indicate a time estimate for when the university expects to respond to an appeal. The appeal procedures must be included in all denial of admission notifications to students and must also be published on the university website. Applicants should consult with SJSU Admissions.

Orientation

Frosh Orientation

Orientation is an important first step to help new students learn to navigate SJSU, register for classes, and make the connections they need to be successful! These mandatory programs assist new students with making the transition to college. Orientation is delivered collaboratively by two SJSU departments, Exploratory Student Success Center and New Student and Family Programs. These departments work with new students at Orientation and beyond by utilizing student leaders who are trained in approaches for effective transition. During the program, professional staff advise students about the General Education program, major courses, and prerequisites. Orientation staff who are knowledgeable about the campus guide students and parents/guardians through experiences that educate them about campus programs and services.

Transfer Orientation

Transfer Orientation is a mandatory program that acquaints students with the campus, introduces them to their colleges and major departments, and provides them with critical academic planning information. This program is managed by New Student and Family Programs in collaboration with Exploratory Student Success Center and other campus offices.

Freshman Requirements

Generally, applicants will qualify for consideration for first-time freshman admission if they meet the following requirements:

1. Have graduated from high school, have earned a Certificate of General Education Development (GED) or have passed the California High School Proficiency Examination (CHSPE);
2. The CSU requires that first-time freshman applicants complete, with grades of C- or better, a comprehensive pattern of college preparatory study totaling 15 units. A "unit" is one year of study in high school. These subject requirements are also known as the "a-g" pattern.

Subject Requirements

- 2 years of social science, including 1 year of U.S. history, or U.S. history and government
- 4 years of English
- 3 years of math (algebra, geometry and intermediate algebra; four years recommended)
- 2 years of laboratory science (1 biological & 1 physical, both must have laboratory instruction)
- 2 years in the same foreign language (subject to waiver for applicants demonstrating equivalent competence)
- 1 year of visual and performing arts: art, dance, drama/theater or music
- 1 year of electives: selected from English, advanced mathematics, social science, history, laboratory science, foreign language, visual and performing arts or other courses approved and included on the UC/CSU "a-g" list.

Note: The CSU will accept "Credit" or "Pass" grades to satisfy "a-g" requirements completed during Winter, Spring, Summer or Fall 2020 terms and during Winter, Spring or Summer 2021 terms. The CSU expects and assumes that high school Pass (Credit) grades will represent work completed at the C- or higher level. As of Fall 2021 and forward, grades are expected for courses.

3. Earn a qualifying "a-g" grade point average (GPA) as described below.
 - California residents and graduates of California high schools will be eligible for admission by earning a 2.50 or greater "a-g" GPA.
 - Any California high school graduate or resident of California earning a GPA between 2.00 and 2.49 may be evaluated for admission based upon supplemental factors such as number of courses exceeding minimum "a-g" requirements, household income, extracurricular involvement, and other available information that would inform the university admission decision.

- Non-California residents may be eligible for admission to the CSU by earning a 3.00 or greater "a-g" GPA along with other supplemental factors utilized by the individual university, including those outlined by impacted universities and programs.
 - Any Non-California resident earning a GPA between 2.47 and 2.99 may be evaluated for admission based upon supplemental factors such as number of courses exceeding minimum "a-g" requirements, household income, extracurricular involvement, and other available information that would inform the university admission decision.
4. Each CSU will determine the supplemental factors used with GPA to determine eligibility in these cases and communicate these criteria publicly for prospective students.

The California State University (CSU) has permanently discontinued the use of ACT/SAT examinations in determining admission eligibility. When available, admitted students are encouraged to submit official test scores; they would be considered only for purposes of student placement in Math or English courses.

Provisional Admission

San José State University may provisionally admit first-time freshman applicants based on their academic preparation through the junior year of high school and planned coursework for the senior year. The university will monitor the final terms of study to ensure that admitted students complete their secondary school studies satisfactorily, including the required college preparatory subjects, and graduate from high school. Students are required to submit an official transcript after graduation to certify that all coursework has been satisfactorily completed. Official high school transcripts must be received prior to the deadline set by the university. In no case may documentation of high school graduation be received any later than the census date for a student's first term of CSU enrollment. A CSU may rescind admission decisions, cancel financial aid awards, withdraw housing contracts and cancel any university registration for students who are found to be ineligible after the final transcript has been evaluated.

The offer of provisional admission is based on the academic information that applicants report on the CSU Apply application. All academic information must be verified before the admitted student will be allowed to enroll and register for classes at SJSU. The admission status will remain "provisional" until an official, final transcript(s) passes verification and confirmation of graduation from high school has been made. The offer of provisional admission to the academic plan (major) listed on the admission letter is only valid for the admit term and may not be deferred to another semester. In addition, it is not possible to change majors prior to enrollment at SJSU.

Applicants will qualify for regular (non-provisional) admission when the university verifies that they have graduated and received a high school diploma, have completed the comprehensive pattern of college preparatory "a-g" subjects and, if applying to an impacted program or university, have met all supplementary criteria.

SAT and ACT Tests

The California State University (CSU) has permanently discontinued the use of ACT/SAT examinations in determining admission eligibility. When available, admitted students are encouraged to submit official test scores, as they will be considered to help determine accurate placement in math or English courses..

Placement Measures for First-Year GE Written Communication and Mathematics/Quantitative Reasoning Courses

Freshman skills assessment and placement for general education written communication and mathematics/quantitative reasoning shall be based on systemwide skills assessment standards that include the Early Assessment Program/ Smarter Balanced Achievement Levels, ACT scores and/or SAT scores, high school coursework, high school GPA and math GPA. (Note: SAT and ACT are not used for admission, but admitted students are encouraged to submit official test scores, as they will be considered to help determine accurate placement in math or English courses.)

Skills assessments are not a condition for admission to the CSU; they are a condition of enrollment. These skills assessments are designed to inform entering freshmen of placement in appropriate baccalaureate-level courses based on their skills and needs.

First-time freshmen in need of support as determined by the skills assessment will be placed in courses with supported instruction. Supported instruction is designed to assist students in credit bearing courses. Students may also be required to participate in the Early Start Program.

The Early Start Program offers pathways and academic and social support that align with each incoming student's needs. The program's goal is to ensure that first time students successfully complete the General Education (GE) written communication (A2) and math/quantitative reasoning (B4) requirements within their first year.

Placement for GE Area A2 Written Communication

Fulfilled the GE Area A2 Written Communication Requirement (W-I)

The student has met the requirement via completion of one of the following:

Advanced Placement (AP) Test

- 3 or above: AP Language and Composition
- 3 or above: AP Composition and Literature

College Transfer Coursework

- Completed an approved college course that satisfies CSU GE Area A2 (written communication) with a grade of C- or better (official transcript required).

International Baccalaureate (IB) Exam

- 4 or above: IB Language A - Language and Literature (HL)
- 4 or above: IB Literature (HL)
- 4 or above: IB Language A1 (HL)

College Level Examination Program (CLEP)

- 50 or above: CLEP College Composition
- 50 or above: CLEP College Composition Modular

Enroll in a GE Subarea A2 English Course in the first year (W-II)

The student has met examination standards and/or multiple measures-informed standards via one of the criteria below:

English CAASPP/EAP Test:

- Standard Exceeded (Level 4)
- Standard Met (Level 3) and completed 12th grade approved year-long English course (CSU ERWC, AP, Weighted Honors English) with grade of C- or better

SAT Evidence-Based Reading and Writing Test:

- 550 or above
- 510 - 540 and completed 12th grade approved year-long English course (CSU ERWC, AP, Weighted Honors English) with grade of C- or better

ACT English Test:

- 22 or above
- 19 - 21 and completed 12th grade approved year-long English course (CSU ERWC, AP, Weighted Honors English) with grade of C- or better

High School Courses and GPA:

- Weighted GPA 3.3 or above
- GPA 3.0 or above and completed approved 12 grade year-long English course (AP, CSU ERWC, Weighted Honors English) with a grade of C- or better
- GPA 3.0 or above and completed Honors English
- GPA 3.0 or above and 5 or more years of high school English

Enroll in a Supported GE Subarea A2 English Course in the first term is recommended (W-III)

The student has met examination standards and/or multiple measures-informed standards via one of the criteria below:

SAT Evidence-Based Reading and Writing Test:

- 510 - 540 and 4 or more years of high school English

ACT English Test:

- 19 - 21 and 4 or more years of high school English

High School Courses and GPA:

- Weighted GPA 3.0 or above and 4 or more years of high school English

Enroll in a Supported GE Subarea A2 English Course in the first term (required) (W-IV)

If none of the above criteria is met, students must take their GE Subarea A2 course in the first semester and remain continuously enrolled in area A2 until the requirement is met. Students have the option to select the stretch version of English 1A after completing the Reflection on College Writing (RCW).

Placement for GE Mathematics/Quantitative Reasoning: Non-Math Intensive Majors (Algebra and Statistics Disciplines, Non-STEM and Undecided Majors)

Fulfilled the GE Subarea B4 Math/Quantitative Reasoning Requirement (M-I)

The student has met the requirement via completion of one of the following:

Advanced Placement (AP) Test:

- 3 or above on AP Calculus AB*
- 3 or above on AP Calculus BC*
- 3 or above on AP Statistics
- 3 or above on AP Computer Science Principles*

* Students may receive credit for only one calculus or computer science exam.

International Baccalaureate (IB) Test:

- 4 or above on Math (HL): Analysis and Approaches
- 4 or above on Math (HL): Applications and Interpretation

College Level Examination Program (CLEP):

- 50 or above on: Calculus, College Algebra, College Algebra-Trigonometry, Pre-Calculus, or Trigonometry

College Transfer Coursework:

- Completed math/quantitative reasoning college course with a C- or better that satisfies CSU GE Area B4 (official transcript required).

Enroll in a GE Subarea B4 Math/Quantitative Reasoning Requirement Course in the first year (M-II)

The student has met examination standards and/or multiple measures-informed standards via one of the following criteria:

CAASPP/EAP Math Exam:

- Standard Exceeded (Level 4)
- Standard Met (Level 3) and completed 12th grade approved year-long math course beyond Algebra 2 or Integrated Math 3, with a C- or better
- Standard Met and 4 or more years of high school math or quantitative reasoning

SAT Math Test:

- 570 or above
- 550 or above on Subject Test in Math Level 1 or 2
- 520 - 560 and completed 12th grade approved year-long math course beyond Algebra 2 or Integrated Math 3, with a C- or better

ACT Math Test:

- 23 or above
- 20 - 22 and completed 12th grade approved year-long math course beyond Algebra 2 or Integrated Math 3, with a C- or better

High School Courses and GPA:

- Weighted math GPA 3.0 or above and completed 12th grade approved year-long math course beyond Algebra 2 or Integrated Math 3, with a C- or better
- Weighted math GPA 3.0 or above and 5 or more years of high school math or quantitative reasoning
- Weighted high school GPA 3.7 or above
- Weighted high school GPA 3.5 or above and 4 or more years of high school math or quantitative reasoning

*View SAT score conversion for scores prior to March 2016 (old SAT)

Enroll in a Supported GE Subarea B4 Math/Quantitative Reasoning Course in the first term is recommended (M-III)

The student has met examination standards and/or multiple measures-informed standards via one of the criteria below:

High School MATH GPA:

- Weighted math GPA 3.3 or above
- Weighted high school GPA 3.0 or above

Enroll in a Supported GE Subarea B4 Math/Quantitative Reasoning Course in the first semester (required) and Participation in the B4 Supported Pathways Program (Early Start) is highly recommended (M-IV)

If none of the above criteria is met, it is highly recommended that students complete their GE Subarea B4 course through the Supported Pathways Program (EarlyStart) during the summer before their first year. Alternatively, students must take their GE Subarea B4 course in the first semester and remain continuously enrolled in area B4 until the requirement is met.

Placement for GE Mathematics/Quantitative Reasoning: Pre-STEM/STEM and Other Math-Intensive Majors

Fulfilled the GE Subarea B4 Math/Quantitative Reasoning Requirement (M-I)

The student has met the requirement via completion of one of the following:

Advanced Placement (AP) Test:

- 3 or above on AP Calculus AB*
- 3 or above on AP Calculus BC*
- 3 or above on AP Statistics
- 3 or above on AP Computer Science Principles*

*Students may receive credit for only one calculus or computer science exam.

International Baccalaureate (IB) Test:

- 4 or above on Math (HL): Analysis and Approaches
- 4 or above on Math (HL): Applications and Interpretation

College Level Examination Program (CLEP):

- 50 or above on: Calculus, College Algebra, College Algebra-Trigonometry, Pre-Calculus, or Trigonometry

College Transfer Coursework:

- Completed math/quantitative reasoning college course with a C- or better that satisfies CSU GE Area B4 (official transcripts required).

Enroll in a GE Subarea B4 Math/Quantitative Reasoning Course in the first year (M-II)

The student has met examination standards and/or multiple measures-informed standards via one of the criteria below:

CAASPP/EAP Math Exam:

- Standard Exceeded (Level 4)

- Standard Met (Level 3) and completed 12th grade approved year-long math course beyond Algebra 2 or Integrated Math 3 with a C- or better

SAT Math Test:

- 570 or above
- 550 or above on Subject Test in Math Level 1 or 2
- 520 - 560 and completed 12th grade approved year-long math course beyond Algebra 2 or Integrated Math 3 with a C- or better

ACT Math Test:

- 23 or above
- 20 - 22 and completed 12th grade approved year-long math course beyond Algebra 2 with a C- or better

High School Courses and GPA:

- Weighted math GPA 3.5 or above and completed 12th grade approved year-long math course beyond Algebra 2 or Integrated Math 3 with a grade of C- or better
- Weighted math GPA 3.5 or above and 5 or more years of high school math or quantitative reasoning
- Weighted high school GPA 3.7 or above

Enroll in a Supported GE Subarea B4 Math/Quantitative Reasoning Course in the first term is recommended (M-III)

The student has met examination standards and/or multiple measures-informed standards via the criteria below:

High School Math GPA:

- Weighted math GPA 3.3 or above

Enroll in a Supported GE Subarea B4 Math/Quantitative Reasoning Course in the first semester (required) and Participation in the B4 Supported Pathways Program (Early Start) is highly recommended (M-IV)

If none of the above criteria is met, it is highly recommended that students complete their GE Subarea B4 course through the Supported Pathways Program (EarlyStart) during the summer before their first year. Alternatively, students must take their GE Subarea B4 course in the first semester and remain continuously enrolled in area B4 until the requirement is met.

Early Start Program

The goal of the Early Start Program (ESP) is to:

- Ensure that first-time students successfully complete the General Education (GE) math/quantitative reasoning (B4) requirement within their first year.
- Better prepare students in written composition and mathematics/quantitative reasoning before the fall term of freshman year, improving students' chances of successful completion of a baccalaureate degree.
- Students are encouraged to visit the SJSU Early Start Program website once admitted.
- Pell-eligible students will receive a full fee waiver for Early Start courses. (Students may still be responsible for purchasing course materials such as textbooks or software licenses.)

To facilitate appropriate first-year course placement, the CSU evaluates entering students for academic preparation in two areas: math/quantitative reasoning and written communication. The evaluation process takes into account several factors, including grade point average, completed high school coursework, transfer-level coursework, and scores on standardized tests such as the SAT, ACT, CAASPP/EAP, and Advanced Placement and International Baccalaureate examinations. For more information on CSU first year placement policies in mathematics/quantitative reasoning and English/written communication, please visit CSU Student Success - Academic Preparation.

On the basis of this evaluation, some students who may benefit from additional academic preparation are encouraged to participate in summer skill-building activities through the Early Start Program, which provides students the opportunity to take a college level math course in the summer, work on their writing skills, and participate in online campus orientation activities. Eligible students will receive information about the program, including specific course recommendations, through MySJSU starting in the first week of May and continuing throughout the summer. Regular financial aid packages may not be applied to Early Start classes; however, fee waivers are automatically given to qualifying students.

Students who need sign language interpreters or other accommodations should contact the Accessible Education Center (AEC) at (408) 924-6000 as soon as possible, or at least two weeks prior to the first day of Early Start classes. For more information about obtaining accommodations contact the AEC.

Subject Requirement Substitution for Students with Disabilities

If you are unable to complete certain subjects because of your disability, please call the Accessible Education Center at 408-924-6000 or by email aec-info@sjsu.edu.

Step to College/Unitrack - High School Students

High school students may be considered for enrollment in certain special programs if recommended by the principal and the appropriate university department chair and if preparation is equivalent to that required of eligible California high school graduates. Such admission is only for a given specific program and does not constitute a right to continued enrollment.

The Dual Enrollment website provides additional information.

Transfer Policies of California State University

Most commonly, college-level credits earned from an institution of higher education accredited by a regional/national accrediting agency are accepted for transfer to member universities of the CSU. However, authority for decisions regarding the transfer of undergraduate credits is delegated to each university.

California Community Colleges and other authorized certifying institutions can certify up to 39 semester (58.5 quarter) units of General Education-Breadth (GE Breadth) or 37 semester (55.5 quarter) units of the Intersegmental General Education Transfer Curriculum (IGETC) for transfer students to fulfill lower-division general education requirements for any CSU prior to transfer.

"Certification" is the official notification from a California Community College or authorized institution that a transfer student has completed courses fulfilling lower-division general education requirements. The CSU GE-Breadth and the Intersegmental General Education Transfer Curriculum (IGETC) certification course lists for particular community colleges can be accessed at the official transfer and articulation system for California's public colleges and universities website, assist.org.

CSUs may enter into course-to-course or program-to-program articulation agreements with other CSUs, any or all of the California community colleges and other regionally accredited institutions. Established CSU and CCC

articulations may be found on assist.org. Students may be permitted to transfer no more than 70 semester (105 quarter) units to a CSU from an institution which does not offer bachelor's degrees or their equivalents, for example, community colleges. Given the university's 30-semester (45-quarter) unit residency requirement, no more than a total of 90 semester (135 quarter) units may be transferred into the university from all sources.

Transfer Requirements

Applicants who have completed fewer than 60 transferable semester college units (fewer than 90 quarter units) are considered lower-division transfer students. Applicants who have completed 60 or more transferable semester college units (90 or more quarter units) are considered upper-division transfer students. Applicants who complete college units during high school or through the summer immediately following high school graduation are considered first-time freshmen and must meet the CSU minimum eligibility requirements for first-time freshman admission. Transferable courses are those designated for baccalaureate credit by the college or university offering the courses and accepted as such by the university to which the applicant seeks admission.

Lower Division Transfer Requirements

An applicant who completes fewer than 60 semester (90 quarter) units of college credit is considered a lower division transfer student. Due to enrollment demands most CSU campuses, including SJSU, do not admit lower-division transfers so that more upper-division transfers can be accommodated.

Having fewer than 60 semester (90 quarter) units at the point of transfer may affect eligibility for registration priority at a CSU and may affect the student's financial aid status.

California resident transfer applicants with fewer than 60 semester or 90 quarter units must:

- Have a cumulative grade point average of 2.0 (C) or better in all transferable units attempted;
- Have completed, with a grade of C- or better, a course in written communication and a course in mathematics or quantitative reasoning at a level satisfying CSU General Education Breadth Area A2 and B4 requirements, respectively;
- Be in good standing at the last institution attended; and
- Meet any one of the following eligibility standards.

Generally, applicants will qualify for admission as a lower division transfer student if they have a cumulative GPA of at least 2.0 (C or better) in all transferable units attempted, are in good standing at the last college or university attended, and meet any of the following standards:

1. Will meet the freshman admission requirements (GPA and subject requirements) in effect for the term to which they are applying (see "Freshman Requirements"); or
2. Were eligible as a freshman at the time of high school graduation except for the subject requirements, and have been in continuous attendance in an accredited college since high school graduation, and have made up the missing subjects.

Applicants who graduated from high school prior to 1988 should contact the Admissions Office to inquire about alternative admission programs.

Making Up Missing College Preparatory Subject Requirements

San José State University does not allow students to make up missing college preparatory (a-g) subjects over the summer sessions. All work must be completed by the end of the 8th semester of high school with a "C- or Better" grade.

Upper Division Transfer Requirements

Generally, applicants will qualify for consideration for upper-division transfer admission if they meet all of the following requirements:

1. Cumulative grade point average of at least 2.0 (C or better) in all transferable units attempted;
2. In good standing at the last college or university attended; and
3. Completed at least sixty (60) transferable semester (90 quarter) units of college level coursework with a grade point average of 2.0 or higher and a grade C- or better in each course used to meet the CSU general education requirements in written communication, oral communication, critical thinking, and quantitative reasoning, e.g. mathematics.

The 60 units must include at least 30 units of courses that meet CSU general education requirements, including all of the general education requirements in communication in the English language (both oral and written) and critical thinking and the requirement in mathematics/quantitative reasoning (usually 3 semester units) OR the Intersegmental General Education Transfer Curriculum (IGETC) requirements in English communication and mathematical concepts and quantitative reasoning.

All applicants for transfer will be required to complete a SJSU supplemental application including grades for four basics coursework completed and any preparatory coursework considered in the impaction review for particular programs (majors).

Any transfer applicant who wishes to be considered for admission must complete and submit SJSU's supplemental application by the deadline posted to their MySJSU To Do List.

For more information about the way that this information will be considered for admission and a list of major-specific coursework, please see the Program Specific Supplemental Coursework website.

Questions about the Supplemental Application can be answered by consulting our help guide.

Associate Degrees for Transfer (ADT: AA-T or AS-T)

Student Transfer Achievement Reform (STAR) Act (SB 1440)

The Associate in Arts for Transfer (AA-T) and the Associate in Science for Transfer (AS-T) degrees offered at the California Community Colleges (CCC) are designed to provide California Community College students with the optimum transfer preparation and a clear admission pathway to those CSU degree majors.

Students who have completed these transfer degrees and are admitted to a similar CSU major program or option for that discipline will be able to complete the Baccalaureate Degree within 60 semester or 90 quarter units providing that all remaining required courses are completed successfully without a break in attendance and providing that no supplemental courses for minors or areas of emphasis are undertaken.

CCC students who earn an Associate Degree for Transfer (AA-T or AS-T) are guaranteed admission with junior standing to a CSU and given priority admission consideration over other transfer applicants when applying to a local CSU or non-impacted CSU program. AA-T or AS-T admission applicants are given limited priority consideration based on their eligibility ranking to an impacted university/program or to CSUs/programs that have been deemed similar to the degree completed at the community college. Students who have completed an AA-T/AS-T in a program deemed similar to a CSU major are able to complete remaining requirements for graduation within 60 semester (90 quarter) units. It is the responsibility of the student who has earned an AA-T/AS-T to provide documentation of the degree to the CSU. For the admissions process, students are responsible for working with their community college counselors to complete verification of AA-T or AS-T degree progress through the e-verify process within the established university deadlines.

Students who earn associate degrees for transfer and apply to a CSU campus but cannot be admitted due to impaction will be redirected to another CSU campus and offered admission for the same term. In order to qualify for the priority admission guarantee, transfer applicants must be conferred an approved Associate Degree for Transfer (AA-T/AS-T) by a California Community College, apply for admission to California State University campuses for an

open term by the published deadline, submit all requested transcripts and documents, meet CSU admission eligibility requirements for the campus and/or program, and comply with any other prescribed admission requirements. It is the responsibility of these transfer students to provide documentation about the completion of the degree to each CSU campus that has received an application for admission.

Transfers - Provisional Admission

The offer of provisional admission is based on the academic information that applicants report on the Cal State Apply application and supplemental application materials. All academic information must be verified before the admitted student will be allowed to enroll and register for classes at SJSU. The admission status for a fall term will remain "provisional" until an official, final transcript(s) passes verification and confirmation of completion of any spring work in progress. The admission status for a spring term will remain "provisional" until an official, final transcript(s) passes verification and confirmation of completion of any fall work in progress. The offer of provisional admission to the academic plan (major) listed on the admission letter is only valid for the admit term and may not be deferred to another semester. In addition, it is not possible to change majors prior to enrollment at SJSU.

Post-baccalaureate (Second Baccalaureate)

Due to enrollment restrictions and impaction, SJSU no longer accepts applications from post-baccalaureate/second baccalaureate students. The only exception is for Nursing.

International (Foreign) Student Requirements

The following information pertains to specific requirements for SJSU International Students.

Admission Requirements

The CSU must assess the academic preparation of foreign students. For this purpose, "foreign students" include those who hold U.S. temporary visas as students (F-1), exchange visitors (J-1) or in other nonimmigrant classifications.

The CSU uses separate requirements and application filing dates in the admission of foreign students. Verification of English proficiency (see the section on the English Language Requirement for undergraduate applicants), financial resources, and academic performance are each important considerations for admission. Academic records from foreign institutions must be on file at least by the posted deadlines and, if not in English, must be accompanied by certified English translations.

Insurance Requirement

Effective August 1, 1995, as a condition of receiving an I-20 or DS-2019 form, all F-1 and J-1 visa applicants must agree to obtain and maintain health insurance as a condition of registration and continued enrollment in the California State University. Such insurance must be in amounts as specified by the United States Department of State and San José State University. The campus president or designee shall determine which insurance policies meet these criteria. Further information may be obtained from International Student and Scholar Services,

English Language Requirement

All undergraduate applicants whose native language is not English and who have not attended schools at the secondary level or above for at least three years full time where English is the principal language of instruction must present a score of 61 or above on the Test of English as a Foreign Language (TOEFL). Some majors and class levels may require a higher score. For graduate student applicants, please refer to Graduate Admissions. A few programs may also use alternative methods of assessing English fluency: Pearson Test of English Academic (PTE Academic) and the International English Language Testing System (IELTS).

SJSU will assign "to do" items in MySJSU to notify applicants to submit test scores to the admissions office.

SJSU Minimum Proficiency Standards	TOEFL IBT	TOEFL IBT Home or Paper Edition	PTE	IELTS	Duolingo
Undergraduate, <i>except</i> Engineering	61	61	44	6.0	95
All Engineering majors	80	80	53	6.5	95
All Graduate applicants	80	80	53	6.5	N/A

Transcript Requirements

Transcript Submission

All transcripts submitted must be official and sent directly from the originating school or college to the Office of Admissions. San José State University accepts electronic transcripts as the preferred method. If possible please request your school to send your transcripts electronically. Electronic transcripts save processing time. Transcripts submitted by the student are not acceptable unless submitted in a sealed envelope. All records submitted become the property of the university, part of the student's file, and will not be released. If a student does not complete the application or enroll, the records will be kept on file for one year only.

Undergraduate students with college transfer work who are accepted for admission, and who desire advising, will be required to present a set of college transcripts to their departmental advisor. It is suggested that you order a set of transcripts for yourself at the same time you order transcripts sent to the Office of Admissions.

Freshmen Applicant Transcripts

Students applying for admission to the university while still attending high school may be evaluated on their self-reported application information. A final high school transcript with the date of graduation must be sent to the Office of Admissions at the time of graduation and by the assigned due date.

Transfer Applicant Transcripts

Transfer applicants who have completed 60 or more semester units of transferable credits and who are applying to the university need not file the high school transcript. However, applicants are cautioned that if, during the evaluation process, it is determined that fewer than 60 semester units of transferable credit have been earned, processing will stop and the application will be withdrawn.

All undergraduate applicants must file one official transcript from each college or institution in which they have enrolled. This includes USAFI, the Defense Language Institute, Special Sessions (Winter Session and Professional Development), correspondence and audited courses, as well as any college in which the student was enrolled and withdrew without earning credit.

Former students need not order transcripts of work completed at SJSU whether this work was accomplished in the regular session, Open University, Special Sessions, or through the university Professional Development Program. Similarly, they need not reorder transcripts that were previously forwarded to this university. But if they did college

work in the interim, such transcripts must be filed with their papers. Students absent from the university for a period of seven years or longer must resubmit all documents required for admission.

Credential Applicant Transcripts

Applicants to credential programs are required to file one official transcript from each and every college in which they have enrolled. Transcripts must be sent directly from the originating institution to the Office of Graduate Admissions & Program Evaluations (GAPE). Transcripts submitted by the student are not acceptable unless submitted in an official sealed envelope.

All college work must be reported. Failure to comply with this requirement may void the student's application.

Test Requirements

SAT and ACT

The California State University (CSU) has permanently discontinued the use of ACT/SAT examinations in determining admission eligibility. When available, admitted students are encouraged to submit official test scores as they will be considered to help determine accurate placement in math or English courses. Registration forms and dates for the SAT or ACT are available from school or college counselors or from a CSU campus testing office. Or students may contact:

The College Board (SAT)

250 Vesey Street
New York, NY 10281
866-756-7346
www.collegeboard.org

ACT Registration Unit

P.O. Box 414
Iowa City, Iowa 52240
319-337-1270
www.act.org

Placement by Examination

Advanced Standing by Examination

Advanced standing by examination permits accelerated progress toward the degree and a wider selection of course work.

Advanced standing by examination is divided into three categories: (1) advanced placement by examination (no unit credit awarded); (2) waiver of requirements (no unit credit awarded); and (3) advanced credit by examination.

Course Placement by Examination

See the policies below and the respective departments for details about all placement examinations.

Mathematics

The Precalculus Proficiency Assessment is offered to students who would like to place into MATH 30, MATH 30X, MATH 70, MATH 71, or MATH 71X and have not yet satisfied the prerequisites (MATH 70: MATH 18A/MATH 19 or SAT 570+ or ACT 23+; MATH 71: MATH 18A/MATH 19 or SAT 570+ or ACT 23+; MATH 30: MATH 19 with B or better; MATH 30X: MATH 19 with C- or better). Contact the Math Department for more information or contact the Testing Office; testing-office@sjsu.edu.

Foreign Language

Placement examinations in French, German and Spanish are recommended for those students who studied language in high school or acquired language skills through life experiences.

Students having completed college level foreign language (at SJSU or elsewhere) generally will not take the placement examination but will enroll in the course for which they qualify on the basis of units completed.

Music

All new and transfer music majors, including graduate students and returning former students, must report to the School of Music for auditions, advising and placement examinations. Music majors and minors must also audition for a major ensemble before completing registration.

Precalculus Proficiency Assessment (PPA)

The Precalculus Proficiency Assessment (PPA) is offered to students who would like to place into MATH 30, MATH 30X, MATH 42, MATH 42X, MATH 70, MATH 71, or MATH 71X and have not yet satisfied the prerequisites. For more information, consult the Testing Office; testing-office@sjsu.edu.

- Entering freshmen who plan to take MATH 30, MATH 30X, MATH 42, MATH 42X, MATH 70, MATH 71, or MATH 71X their first semester should take the Precalculus Proficiency Assessment *prior* to attending orientation. Exams are offered throughout September through January for Spring admits and May through August for Fall admits. Check the Testing Office website for details.
- For more information about the courses and their prerequisites, please read the Calculus, Discrete Mathematics, and Business Math web pages.

Placement Through External Exams

Information regarding external exams, Advanced Placement (AP) Exams and College Level Exam Program (CLEP), can be found in the linked sections of this catalog. Specific score information regarding MATH course prerequisites is found on the Calculus, Discrete Mathematics, and Business Math web pages.

Precalculus Proficiency Assessment through ALEKS PPL

The Precalculus Proficiency Assessment at SJSU is conducted through ALEKS PPL, an adaptive online program that uses artificial intelligence to map a student's strengths and weaknesses.

It consists of 3 parts:

1. Initial Assessment (approximately 30 questions, about 60-90 minutes to complete)
2. Prep and Learning Module (individualized, self-paced online review, with up to 2 practice tests)
3. Access to 2 Proctored Placement Assessments (Proctored in-person or online at SJSU. For non-local students, we can make arrangements for proctoring in person if available at other testing locations.)

Additional information on the PPA is found on the Testing Office website.

Registration and Payment

Students will receive information about registration and payment for the PPA once they are admitted to SJSU.

Accommodations

Students needing accommodations can take the Precalculus Proficiency Assessment through the Accessible Education Center (AEC). Registration can be done after payment and directly through the AEC.

Foreign Language Placement Examination

The placement test is recommended for those students who studied a language in high school or acquired language skills through life experiences such as foreign travel or study abroad.

If you have taken college level foreign language courses (at SJSU, a community college, or other university), you do not need to be tested. Just enroll in the course for which you qualify on the basis of units accumulated. If you are unsure about course equivalencies, call 408-924-4602 and you will be referred to an advisor.

Students may also take the Placement Test for Chinese, French, German, Italian, Japanese, Russian, or Spanish on an individual basis for the following semester. Details are available on the Immersion Language Placement Test website or call the Carmen Sigler Media Center at 408-924-4696.

For other languages, call 408-924-4602.

Waiver Examinations

A satisfactory score on one or more of the following tests will result in a waiver of the requirement, but no unit credit will be awarded. Information on all waiver examinations is available in the Testing Office. There is a test fee associated with some of these exams.

American Institutions

A waiver examination (giving no unit credit) is available in the Testing Office to challenge the California Government graduation requirement (Area US3).

Writing in the Disciplines (WID) Requirement

All students, regardless of where they began their college studies, are required by the California State University to satisfy an upper division written communication requirement, called the Graduation Writing Assessment Requirement (GWAR). At SJSU, the Writing in the Disciplines (WID) course fulfills the GWAR. To help students select the appropriate WID course, please consult the Upper Division Writing Directed Self-Placement website.

The following students do not need to take a WID course to fulfill the GWAR:

1. Students who have completed the Graduate Writing Assessment Requirement (GWAR) at SJSU or at another CSU campus as a matriculated student at the time of completion. Note: If you have satisfied the GWAR at another CSU campus, your department may still require that you take 100W to satisfy the requirements of the major, even though the university GWAR requirement has been met;
2. Post-baccalaureate students who have earned a baccalaureate degree from a regionally accredited U.S. college or university;
3. Students who have submitted a Writing in the Disciplines petition and received approval granting equivalency based on satisfactory completion of an upper division composition course completed at another university, or credit for prior learning, as applicable.

Test Accommodations

Students requiring test accommodations must submit the appropriate documentation to the Accessible Education Center (AEC). To ensure accommodations can be made, an appointment must be scheduled with an AEC counselor at least one month prior to a standardized or placement exam to determine eligibility and prescribe test accommodations. Students unable to meet this deadline should contact the AEC as soon as possible.

Transfer Credit

SJSU has extensive articulation with many colleges and universities in California. Course-to-course articulation agreements identify courses of comparable content for major and minor requirements for undergraduate degree programs at SJSU. The articulation agreement assures students that the approved transfer courses on the transfer campus will be accepted "in lieu of" the comparable SJSU courses. Information about the courses for each campus that SJSU has agreements with can be found at our comprehensive on-line transfer planning site.

Generally, transfer credit will be posted within the first semester of attendance or sooner in some cases. It is important to submit official transcript(s) from all institutions attended for work completed to ensure that transfer credit is posted.

San José State University accepts electronic transcripts as the preferred method. If possible, please request your school to send your transcripts electronically. Electronic transcripts save processing time. If you have questions or need assistance with your transfer credit, please email eval@sjsu.edu.

Credit from Other Colleges and Universities

California Community Colleges will certify to the California State University those courses that are of baccalaureate level and therefore transferable for at least elective credit. Credits earned in accredited community colleges will be evaluated by the Office of Undergraduate Admissions in accordance with Title 5 of the California Code of Regulations, Section 40409: A maximum of 70 semester units earned in a community college may be applied toward the degree, with the following limitations:

- a. No upper division credit may be allowed for courses taken at a community college, though content equivalence to upper division courses may be approved so that lower division courses may be articulated for "content credit only."
- b. No credit may be allowed for professional courses in education taken at a community college, other than an introduction to education course.

Credits earned at regionally accredited colleges will be evaluated by the Office of Undergraduate Admissions and advanced standing allowed on the basis of the evidence submitted. Credit toward the fulfillment of graduation requirements will be allowed only insofar as the courses satisfactorily completed have met the standards and the requirements of the basic course pattern of the college.

Credits earned at non-accredited colleges may be accepted as a basis for advanced standing only to the extent that the applicant can demonstrate to the satisfaction of the university that a satisfactory degree of proficiency has been attained in the course in question.

For details on transferring graduate credits from other institutions, see the section on Transfer Credit in the Graduate Program.

Credit for Prior Learning

Credit by Standardized Examination

San José State University grants credit toward its undergraduate degrees for successful completion of various standardized exams. The following are the guidelines for the credit that may be granted at SJSU for each standardized exam. Students may not earn duplicate credit by examination if they have previously taken or subsequently take equivalent exams or coursework.

Display information for: Advanced Placement (AP) Exams

Display information for: College Level Exam Program (CLEP)

Display information for: International Baccalaureate (IB)

Credit by Challenge Examination (CBE)

Students may challenge courses by taking examinations developed at San José State University.

In accordance with University Policies F15-5 and F15-11, academic credit may be earned through Challenge Exam (CBE) for any department-approved 0-100 level course for which an equivalent CLEP exam is not available. Credit earned from CBE is non-transferable and awarded on a Credit/No Credit basis. It can only be used to clear SJSU requirements and assist with progress towards a degree at SJSU. CBE can be attempted only once per course, up to a maximum of 30 units. This 30 unit maximum also includes course credit earned through CLEP examinations.

If you are seeking Credit By Challenge Examination, you must meet the following criteria:

- You are a currently matriculated student at SJSU.
- You cannot be enrolled in the course and have never received a grade (other than W) for the course or an equivalent course.
- You can only use the course towards completion of degree requirements at SJSU.
- You have never attempted CBE for the course before.
- You have fewer than the maximum of 30 units allowed for CBE/CPL/CLEP credit.

Visit the Testing Office Credit By Examination website for more information.

Credit for Non-Collegiate Instruction

San José State University grants undergraduate degree credit for successful completion of non-collegiate instruction, either military or civilian, appropriate to the baccalaureate degree, which has been recommended by the Commission on Educational Credit and Credentials of the American Council on Education. A maximum of 30 units of undergraduate degree credit is allowed for Credit for Prior Learning (CPL). The numbers of units allowed are those recommended in the

- American Council on Education (ACE) Military Guide, and
- American Council on Education (ACE) National Guide.

Credit for Military Training in Non-Collegiate Settings

Students shall be granted undergraduate or graduate credit for learning acquired through education, training and service provided by the Armed Forces of the United States as recommended by the American Council on Education (ACE) Military Guide. A maximum of 30 units of undergraduate degree credit is allowed for Credit for Prior Learning (CPL). Two units of Physical Education (PE) credit will be waived based on documented completion of a basic military training program.

Documents that should be submitted to assess credit for military education are:

- Joint Service Transcripts (JTS; Army, Navy, Marines, Coast Guard, Space Force)

- Community College of the Air Force transcript (CCAF)

The Office of Undergraduate Admissions will assist students with questions they may have about transfer credit in order to determine student level and admission eligibility.

Office of Admissions and Outreach (Undergraduate)

One Washington Square

San José, CA. 95192-0016

Phone: 408-283-7500

Email: eval@sjsu.edu

Credit for Professional Education

Special Session

Courses numbered 100-399 earn degree and residence credit. While the university may accept this work toward baccalaureate and graduate degrees, it is a matter of individual department evaluation as to whether such work is accepted as applying toward the major or minor. A record of this work is maintained by the Registrar's Office.

Transcripts are available once credit is posted.

Continuing Education Units (CEUs)

Courses numbered 400-499 offer Continuing Education Units (CEUs), a nationally-recognized unit of measurement for a variety of noncredit programs applying toward licensure, promotion or career advancement. CEUs are not applicable to a degree nor to residence unit requirements. A record of this work is maintained by Professional Education. Transcripts are available once credit is posted.

Credit for Demonstrated Learning, Knowledge, or Skills Acquired through Experience

Students may earn academic credit toward the degree for learning, knowledge, or skills acquired through experience. Academic credit for such experiential learning shall be awarded only when it is academically creditable and verifiable through a prior-learning assessment methodology.

Before academic credit earned for experiential learning becomes a part of the student's academic record, the student shall complete 15 units at the degree granting institution, or a sufficient number of units to establish evidence of a satisfactory learning pattern. Graduate students shall complete three units in residence at the degree granting institution.

Credit for Home Study

The university does not offer and rarely accepts credit for correspondence (home study) courses.

Advanced Placement (AP) Exams

San José State University grants credit toward its undergraduate degrees for successful completion of examinations of the Advanced Placement Program of the College Board. Students who present scores of three or better will be granted up to six semester units (nine quarter units) of college credit for each exam (no duplicate credit granted). The number of units granted, course equivalence, and satisfaction of requirements vary.

Requires scores of 3-5 for credit to be granted.

For historical AP credit by exam information, please visit the TES website and type the College Board in the institution search field.

Exam	Units	Course	GE Credit and Comments
Art History	6	ARTH 70A & ARTH 70B	Areas C1 or C2 (3 units)
Biology	6	BIOL 10	Area B2 & B3 (4 units)
Calculus AB*	3	MATH 30	Area B4 (3 units)
Calculus BC*	7	MATH 30 & MATH 31	Area B4 (3 units)
Calculus BC/AB Subscore*	3	MATH 30	Area B4 (3 units)
Chemistry	6	CHEM 30A	Area B1 & B3 (4 units)
Chinese Language & Culture	6	CHIN 1A	Area C2 (4 units)
Comparative Govt & Politics	3	POLS 2	Area D (3 units)
Computer Science A	3	CS 46A	No GE
Computer Science Principles [beginning Fall 2018]	3	Elective Credit	Area B4 (3 units)
English Language and Composition	6	ENGL 1A	Score 3 = Area A2 (3 units)
English Language and Composition	6	ENGL 1A & ENGL 1B	Score 4-5 = Areas A2 & C2 (6 units)
English Literature and Composition	6	ENGL 1A & ENGL 10	Score 3 = Area A2 & C2 (6 units)
English Literature and Composition	6	ENGL 1A & ENGL 1B	Score 4-5 = Areas A2 & C2 (6 units)

English Literature and Composition	6	ENGL 1A & ENGL 10	Score 4-5 = Areas A2 & C2 (6 units), at student's request
Environmental Science	4	Elective credit	Area B1 & B3 (4 units)
European History	6	HIST 10A & HIST 10B	Areas C2 or D (3 units)
French Language & Culture	6	FREN 1A	Area C2 (5 units)
German Language & Culture	6	GERM 1A	Area C2 (4 units)
Human Geography	3	GEOG 10	Area D (3 units)
Italian Language & Culture	6	ITAL 1A	Area C2 (3 units)
Japanese Language & Culture	6	JPN 1A	Area C2 (5 units)
Latin	6	Elective credit	Area C2 (3 units)
Macroeconomics	4	ECON 1A	Area D (3 units)
Microeconomics	4	ECON 1B	Area D (3 units)
Music Theory	6	Elective credit	No GE
Music Theory - Aural Subscore	0	No Credit	No GE
Music Theory - Non Aural Subscore	0	No Credit	No GE
Physics 1**	4	PHYS 2A	Areas B1 & B3 (4 units)
Physics 2**	4	PHYS 2B	Areas B1 & B3 (4 units)
Physics C, Elec & Mag**	4	PHYS 51	Areas B1 & B3 (4 units)
Physics C, Mechanics**	4	PHYS 50	Areas B1 & B3 (4 units)
Precalculus	5	MATH 19	Area B4 (5 units) - Beginning Fall 2023
Psychology	3	PSYC 1	Area D (3 units)
Research	0	No Credit	No GE
Seminar	3	Elective Credit	No GE

Spanish Language and Culture	6	SPAN 1A	Area C2 (4 units)
Spanish Literature and Culture	6	SPAN 1B	Area C2 (4 units)
Statistics	3	STAT 95 or SOCI 15 or PH 67	Area B4 (3 units)
Studio Art, 2D Design	3	ART 12	No GE
Studio Art, 3D Design	3	Elective Credit	No GE
Studio Art, Drawing	3	ART 24	No GE
U.S. Govt & Politics	3	Elective Credit	Area D & US 2 (3 units)
U.S. History	6	HIST 20A & HIST 20B	Areas C2 or D; & US 1 (3 units)
World History	6	HIST 1A & HIST 1B	Areas C2 or D (3 units)
World History Modern	3	HIST 1B	Areas C2 or D (3 units)

*Students may receive credit for only one calculus exam.

**If more than one AP Physics exam is taken then a maximum of 8 units total will be granted, with 4 units to satisfy GE B1+B3.

College Level Exam Program (CLEP)

Students may not receive **more than 30 units** of CLEP credit.

For historical CLEP credit by exam information, please visit the TES website and type the College Board in the institution search field.

Business

Requires score of at least 50 for subject exams.

Subject Area	Units	Course	GE Credit (Comments)
Financial Accounting	3	Elective credit	No GE
Information Systems	3	Elective credit	No GE
Introductory Business Law	3	BUS3 80	No GE
Principles of Management	3	Elective credit	No GE
Principles of Marketing	3	Elective credit	No GE

Composition and Literature

Requires score of at least 50 for subject exams.

Subject Area	Units	Course	GE Credit (Comments)
American Literature	3	Elective credit	Area C2 (3 units)
Analyzing & Interpreting Literature	3	Elective credit	Area C2 (3 units)
College Composition*	6	ENGL 1A	Area A2 (3 units)
College Composition Modular*	3	ENGL 1A	Area A2 (3 units)
English Literature	3	Elective credit	Area C2 (3 units)
Humanities	3	Elective credit	Area C2 (3 units)

*Beginning July 2010 credit and GE may be earned for either College Composition or College Composition Modular, but not for both exams.

World Languages

Requires score of at least 50 for subject exams.

Subject Area	Units	Course	GE Credit (Comments)
French Language (Level 1 = min score of 50)	6	Elective credit	No GE
French Language (Level 2* = min score of 59)	9	Elective credit	Area C2 (3 units)
German Language (Level 1 = min score of 50)	6	Elective credit	No GE
German Language (Level 2* = min score of 60)	9	Elective credit	Area C2 (3 units)
Spanish Language (Level 1 = min score of 50)	6	SPAN 1A	Area C2 (4 units)
Spanish Language (Level 2* = min score of 63)	9	SPAN 1A, SPAN 1B	Area C2 (8 units)
Spanish Language with Writing (Level 1 = min score of 50)	6	SPAN 1A	Area C2 (4 units)
Spanish Language with Writing (Level 2* = min score of 63)	9	SPAN 1A, SPAN 1B	Area C2 (8 units)

*If the student receives credit for Level 2 exam, they may not receive credit for Level 1 exam in the same language.

History and Social Sciences

Requires score of at least 50 for subject exams.

Subject Area	Units	Course	GE Credit (Comments)
American Government	3	Elective credit	Areas US 2 & D (3 units)
History of the U.S. I	3	Elective credit	Areas US 1 & D (3 units)
History of the U.S. II	3	Elective credit	Areas US 1 & D (3 units)
Human Growth & Development	3	PH 15	Area D or E (3 units)
Introduction to Educational Psychology	3	Elective credit	No GE
Introductory Psychology	3	PSYC 1	Area D (3 units)

Subject Area	Units	Course	GE Credit (Comments)
Introductory Sociology	3	SOCI 1	Area D (3 units)
Principles of Macroeconomics	3	ECON 1A	Area D (3 units)
Principles of Microeconomics	3	ECON 1B	Area D (3 units)
Social Sciences & History	6	Elective credit	Area D (6 units) + US1
Western Civilization I	3	HIST 10A	Area C2 or D (3 units)
Western Civilization II	3	HIST 10B	Area D (3 units)

Science and Mathematics

Requires score of at least 50 for subject exams.

Subject Area	Units	Course	GE Credit (Comments)
Biology	6	BIOL 10	Area B2 (3 units, no lab)
Calculus	4	MATH 30	Area B4 (4 units)
Chemistry	6	CHEM 30A	Areas B1 and B3 (6 units)
College Algebra	3	MATH 18A	Area B4 (3 units)
College Mathematics	6	Elective credit	Area B4 (3 units)
Natural Sciences	6	Elective credit	Areas B1 & B2 (3 units each, no lab)
Precalculus	3	MATH 19	Area B4 (3 units)

International Baccalaureate (IB)

Students who present the following official higher level IB Exam scores of four or better, taken before college matriculation, will be granted up to six semester units of lower division baccalaureate credit. The course equivalence and satisfaction of requirements vary.

Requires score of 4-7 on higher level exams for any credit to be granted. Course equivalence dependent on major advisor for major, minor, or support credit.

Exam	Units	Course	GE Credit (Comments)
Anthropology HL	3	ANTH 11	Area D (3 units)
Biology HL - score 5	6	BIOL 10	Area B2 (3 units)
Chemistry HL - score 5	6	CHEM 30A	Area B1 (3 units)
Classical Languages HL	6	Elective credit	Area C2 (3 units)
Computer Science HL	6	Elective credit	No GE
Design Technology HL	6	Elective credit	No GE
Economics HL - score 5	6	ECON 1A & ECON 1B	Area D (3 units)
Geography HL - score 5	6	GEOG 10 & GEOG 12	Area D (3 units)
History (any region) HL - score 5	6	Elective credit	Area C2 or D (3 units)
Islamic History HL	6	Elective credit	Area D (3 units)
Language A: Language and Literature (English) HL - beginning 2013	6	ENGL 1A & ENGL 1B	Area A2 (3 units) & C2 (3 units)
Language A: Language and Literature (language other than English) HL - beginning 2013	6	Elective Credit	Area C2 (3 units)
Language A: Literature (English) HL - beginning 2013	6	ENGL 1A & ENGL 1B	Area A2 (3 units) & Area C2 (3 units)
Language A: Literature (language other than English) HL - beginning 2013	6	Elective Credit	Area C2 (3 units)
Language B (any language) HL	6	Elective Credit	Area C2 (3 units)

Language A1 (English) HL (last exam in 2012)	6	ENGL 1A & ENGL 1B	Area A2 (3 units) & C2(3 units)
Language A1 (any other language) HL (last exam in 2012)	6	Elective credit	Area C2 (3 units)
Language A2 (any language) HL (last exam in 2012)	6	Elective Credit	Area C2 (3 units)
Mathematics HL (last exam 2022)	6	Elective credit	Area B4 (3 units)
Mathematics HL: Analysis and Approaches	6	MATH 30	Area B4 (3 units)
Mathematics HL: Applications and Interpretation	6	MATH 71; UNVS 15	Area B4 (3 units)
Music HL	6	Elective credit	Area C1 (3 units)
Philosophy HL	6	PHIL 10	Area C2 (3 units)
Physics HL - score 5	6	PHYS 1	Area B1 (3 units)
Psychology HL - score 5	3	Elective credit	Area D (3 units)
Social and Cultural Anthropology HL	6	Elective credit	Area D (3 units)
Theatre HL	6	Elective credit	Area C1 (3 units)
Visual Arts HL	6	Elective credit	Area C1 (3 units)

Graduate Admissions

- Graduate Admissions and Program Evaluations (GAPE)
- Graduate Program Applicants
- Graduate and Post-Baccalaureate Application Procedures
- Prospective Students
- Requirements for Applicants
- Transcript Submission
- Graduate Orientation

We appreciate your interest in pursuing a graduate career at San José State University. In this section you will find out more about SJSU, the programs we offer, our application process and requirements, and important deadlines and forms related to applying for graduate admission. Some additional external links that might be of interest to prospective students are also listed, including information about housing and other available services.

Graduate Admissions and Program Evaluations (GAPE)

The GAPE office processes the admission for all graduate and teaching credential programs. For most programs, the admissions process is two-step, whereby applicants apply to the university and the department program. Applicants must first pass CSU eligibility and then pass the admission criteria of the specific department program.

For new students, the GAPE office:

- Receives all university applications, including supplemental materials such as transcripts, residency information, and declaration of finances
- Reviews documents for completeness
- Refers applications that meet minimum CSU eligibility requirements to departmental graduate program coordinators
- Sends out official letters of acceptance for those applicants accepted by both the university and the academic program.

For continuing students, the GAPE office:

- Reviews advancement to candidacy petitions and graduation requests for accuracy and alignment with policies and procedures of the university and the academic programs.
- Ensures course substitutions and transfer credit are applied appropriately to graduate degree programs.
- Awards graduate degrees upon an evaluation of completed program requirements.

Graduate Admissions and Program Evaluations

Student Services Center, Window G
408-924-2480
graduate@sjsu.edu
Current Graduate Students: www.sjsu.edu/gape
Graduate Admissions: www.sjsu.edu/admissions/graduate

Graduate Program Applicants

Doctoral, Master's, Credential, and Graduate Certificates

All graduate applicants (new and returning, including disqualified students who have an approved Program of Study agreement with their graduate department) must submit a complete graduate application by applying through the

CSU Cal State Apply system at calstate.edu/apply. A \$70 nonrefundable fee is required to submit the university application. Applicants for graduate programs are limited to the choice of a single program on each application.

Those wishing to take SJSU classes in any capacity other than through extended education programs (e.g., Open University) must apply for admission to the university and (for most programs) to the department offering the degree in which applicants are interested. After formal admission, the applicant must enroll in classes in the first term of admission to retain active matriculation status.

Former students who have previously attended SJSU and have had a break of two or more consecutive semesters in their enrollment (not counting summer/winter session) must apply for readmission to regain their matriculation status. A former student of SJSU, whether returning after an official leave of absence or continuing immediately after receiving a baccalaureate, master's, or doctoral degree must also apply for admission. Reapplication by a previously matriculated student also results in loss of catalog rights. Therefore, returning students are subject, at departmental discretion, to current department policies and requirements.

Graduate and Post-Baccalaureate Application Procedures

All graduate and post-baccalaureate applicants (i.e., doctorate, joint Ph.D. applicants, master's degree applicants, those seeking educational credentials or certificates and, where permitted, holders of baccalaureate degrees interested in taking courses for personal or professional growth) must file a complete graduate application as described in the graduate and post-baccalaureate admission materials on the Cal State Apply website. Applicants seeking a second bachelor's degree must submit the undergraduate application for admission. Applicants who completed undergraduate degree requirements in the preceding term are also required to complete and submit an application and the \$70 nonrefundable application fee. To be assured of initial consideration by more than one CSU, it is necessary to submit separate applications (including fees) to each CSU campus. All CSU applications must be submitted online via the Cal State Apply application system. An acknowledgement will be sent to the applicant when the online application has been submitted.

Prospective Students

Students intending to pursue graduate work at San José State University may obtain pertinent information from a variety of sources. Careful reading of several publications will save time and prevent many difficulties that often arise due to lack of information. Publications recommended are:

- SJSU Academic Catalog - the listing of graduate courses offered, degree program requirements, and policies, procedures, and regulations by which the academic programs are governed;
- Office of Graduate Admissions & Program Evaluations (GAPE);
- Office of Graduate Enrollment Management (GEM);
- College of Graduate Studies; and,
- various departmental publications available from department offices and graduate program coordinators.

The prospective student is encouraged to consult with the graduate program coordinator for detailed information about his or her specific program of interest. Persons assigned responsibility for advising students in specific graduate programs are listed in various sections of the SJSU catalog. In addition, the Graduate Admissions website provides detailed information about university admission procedures and requirements.

Requirements for Applicants

Graduate and post-baccalaureate applicants may apply for a degree objective, a credential or an advanced certificate objective. Depending on the objective, the CSU will consider an application for graduate admission as follows:

- General Requirements - The minimum requirements for admission to graduate and post-baccalaureate studies at a CSU are in accordance with university regulations as well as Title 5, Chapter 1, Subchapter 3 of the California Code of Regulations.
- Specifically, a student shall at the time of enrollment:
 1. Have completed a four-year college course of study and hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association, or shall have completed equivalent academic preparation as determined by appropriate university authorities;
 2. Be in good academic standing at the last college or university attended;
 3. Have earned a grade point average of at least 2.5 on the last degree completed by the candidate or have attained a grade point average of at least 2.5 (A=4.0 grading scale) in the last 60 semester (or 90 quarter) units attempted; and
 4. Satisfactorily meet the professional, personal, scholastic, and other standards for graduate study, including qualifying examinations, as appropriate university authorities may prescribe. In unusual circumstances, a university may make exceptions to these criteria through a formal request for special action.
- Students who meet the minimum requirements for graduate and post-baccalaureate studies may be considered for admission in one of the four following categories:
 1. **Graduate Classified** - To pursue a graduate degree, applicants are required to fulfill all of the professional, personal, scholastic and other standards, including qualifying examinations, prescribed by the university; or
 2. **Graduate Conditionally Classified** - Applicants may be admitted to a graduate degree program in this category if, in the opinion of appropriate university authority, deficiencies may be remedied by additional preparation through the completion of prerequisites; or
 3. **Post-Baccalaureate Classified**, *e.g., admission to an education credential program* - Persons wishing to enroll in a credential or certificate program will be required to satisfy additional professional, personal, scholastic and other standards, including qualifying examinations, prescribed by the university; or
 4. **Post-Baccalaureate Unclassified** - To enroll in undergraduate courses as preparation for advanced degree programs or to enroll in graduate courses for professional or personal growth, applicants must be admitted as post-baccalaureate unclassified students. By meeting the general requirements, applicants are eligible for admission as post-baccalaureate unclassified students by using the Cal State Apply undergraduate application. Admission in this status does not constitute admission to, or assurance of consideration for admission to, any graduate degree or credential program. (Most CSUs do not offer admission to unclassified post-baccalaureate students.)

(These and other CSU admission requirements are subject to change as policies are revised and laws are amended. The CSU website and the Cal State Apply admission portal are good sources for the most up-to-date information.)

Requirements for International Students

The CSU must assess the academic preparation of international students. The designation, "international students" includes those who are seeking to hold a student visa, hold U.S. temporary visas as students (F-1), exchange visitors (J-1), or are in other nonimmigrant classifications.

The CSU uses specific requirements and application submission dates in the admission of international (F-1/J-1 seeking) students. Verification of English proficiency (see the section English Language Proficiency Requirement), financial resources, and academic performance are all important considerations for admission. Academic records from international institutions must be on file at least by April 20 for Fall and by October 20 for Spring for the first term, unless otherwise noted for a specific program (see Graduate Admission Deadlines). World Education Services (WES) are used to collect academic records from international institutions. WES evaluations must be on file by the stated deadlines for the admission term. Although WES evaluations are used for the authentication of academic documents, the evaluation of credentials and GPA will be conducted by the evaluation team at the Office of Graduate Admissions & Program Evaluations (GAPE). While WES is highly preferred, other evaluation services accepted at this time are Academic Credentials Evaluation Institute, Inc. (ACEI) and Educational Credential Evaluators (ECE).

Test Requirements

Graduate program applicants may be required to take one or more parts of the Graduate Record Examination (GRE). Students with graduate objectives in Business (MBA, MSTax, MSAcct, MSTmMgt) are required to take the Graduate Management Admission Test (GMAT). Some departments may require a locally developed qualification examination in their subject matter areas. Test Requirements can be viewed online and on graduate program web pages.

Applications and information about dates of administration for the GRE and GMAT are available in the Testing Office.

English Language Proficiency Requirement

All graduate and post-baccalaureate applicants, regardless of citizenship, whose native language is not English and whose preparatory education was principally in a language other than English must demonstrate competence in English. SJSU does not accept letters indicating an English-medium of instruction as a substitute for an English-language proficiency exam such as TOEFL, IELTS, the Pearson's Test of English, or other English language proficiency tests. Letters from applicants or institutions will not be accepted. Scores lower than the minimum will not be accepted. Waivers will also not be given for lower scores. Please note that a few of our graduate programs require a higher minimum score than what is posted by the university on the Test Requirements website.

English Language Proficiency Examination	Minimum Score
TOEFL iBT (Internet-based)	80
TOEFL IBT Home or Paper Edition	80
Academic International English Language Testing System (IELTS)	6.5
Academic Pearson Test of English (PTE)	53

Transcript Submission

Transcripts submitted for admission purposes must be official and sent directly from the originating school or college to Graduate Admissions & Program Evaluations (GAPE), San José State University, One Washington Square, San José, CA 95192-0017, or electronically to etranscript@sjsu.edu. International applicants must request WES, ACEI, or ECE evaluations to be sent electronically and directly to San José State University. Unofficial transcripts submitted via the student are not acceptable for this purpose. Records submitted become the property of the university and will not be released to the student. If a student does not fully complete an application and enroll, the records will be kept on file for approximately one year and then destroyed.

Graduate applicants must submit to the GAPE office one official transcript or international evaluation from each accredited institution attended. Failure to report to the university on the admissions application all previous college-level enrollment and to provide transcripts certifying that enrollment are regarded as serious infractions of university policy and may be punishable by permanent separation from the university. SJSU transcripts for prior coursework do not need to be requested to be sent to the Graduate Admissions office. Some departments may also require applicants to file additional transcripts with their graduate program coordinator. Program requirements are located on departmental websites, which can be accessed by clicking on the program name at Admission Requirements for Degree Programs website.

Graduate Orientation

The College of Graduate Studies presents a virtual program designed to inform incoming graduate students of university-wide policies and resources beyond those of individual departments and colleges and to integrate students into the SJSU campus community. Attendance is not mandatory but is highly encouraged. New F-1 international students are required to report to the Office of International Student and Scholars Services (ISSS). Students must check-in with ISSS in order to meet U.S. government requirements.

Graduate Studies Requirements

To Qualify for a Graduate Degree

Students must fulfill the specific program requirements as outlined in the graduate program catalog pages. All candidates for graduation must satisfy the master's requirements or doctoral requirements as described in the linked catalog sections.

Find Your Program

Degree Programs by Colleges

Business | Education | Engineering | Health and Human Sciences | Humanities and the Arts | Professional and Global Education | Science | Social Sciences

Certificates

Credentials

Added Authorizations

College of Graduate Studies

Office: Administration Building 174

Telephone: 408-924-2427

Email: graduate-studies@sjsu.edu

Website: www.sjsu.edu/cgs

Leadership:

Marc d'Alarcao, Dean

Jeffrey Honda, Associate Dean of Graduate Programs

Amy Leisenring, Associate Dean of Inclusive Student Success

The College of Graduate Studies assists graduate programs and their faculty and students to succeed. The College of Graduate Studies supports program development, advising faculty in transforming existing degree and certificate programs or building new ones at the post-baccalaureate, master's, or doctoral level. The College of Graduate Studies is also a resource for students seeking scholarships or who are facing special challenges such as probation or disqualification. The college helps maintain academic integrity through the fair and consistent administration of graduate policies, including those issued by the Chancellor and by the university's Academic Senate. Its Graduate Admissions and Program Evaluations (GAPE) division supports students as they enter and work their way through various degree requirements. The College of Graduate Studies interprets and administers the policies and procedures outlined in the sections that follow.

The Interdisciplinary Studies Major for either a Master of Arts or a Master of Science degree provides an alternative for individuals whose desired study plans do not fit the degree offerings of any single existing degree program on campus. In most cases, a thesis is required for this degree. Applicants or graduate students in other majors who wish to undertake the Interdisciplinary Studies major should consult the College of Graduate Studies Interdisciplinary Studies website to obtain the Information and Application for Interdisciplinary Studies Majors [pdf]. The guide contains the Proposal for Interdisciplinary Studies Major, which must be completed to obtain initial approval by the Associate Dean of Graduate Studies to be able to enter the program.

- Interdisciplinary Studies, MA

- Interdisciplinary Studies, MS

Degrees

Lucas College and Graduate School of Business

The Lucas Graduate School of Business in the Lucas College and Graduate School of Business offers the following degree programs:

- Accounting and Analytics, MS
- Business Administration, MBA
 - Early Career
 - For Professionals
- Finance, MS
- Taxation, MS
- Transportation Management, MS

Connie L. Lurie College of Education

The Connie L. Lurie College of Education offers the following degree programs:

- Child and Adolescent Development, MA
- Counseling and Guidance, MA
- Educational Leadership, Concentration in Emancipatory School Leadership, MA
- Educational Leadership, EdD (Fully Online)
- Educational Leadership, EdD (Hybrid)
- Higher Education Leadership, MA
- Multilingual and Multicultural Literacy Education, MA
- Special Education, MA
- Speech Language Pathology, MS
- Teaching, Critical Bilingual Education (Spanish) Concentration, MAT
- Teaching, MAT

Charles W. Davidson College of Engineering

The Charles W. Davidson College of Engineering offers the following degree programs:

- Aerospace Engineering, MS
- Artificial Intelligence, MS
- Biomedical Engineering, Biomedical Devices Concentration, MS
- Biomedical Engineering, MS (General)
- Chemical Engineering, MS
- Civil Engineering, MS
- Computer Engineering, MS
- Electrical Engineering, MS
- Engineering Management, MS
- Engineering Technology, MS

- Engineering, MS
- Human Factors/Ergonomics, MS
- Human Factors/Ergonomics, User Experience Concentration, MS
- Industrial and Systems Engineering, MS
- Materials Engineering, MS
- Mechanical Engineering, MS
- Quantum Technology, MS
- Software Engineering, MS

College of Health and Human Sciences

The College of Health and Human Sciences offers the following degree programs:

- Audiology, AUD
- Kinesiology, MS
- Nursing, Family Nurse Practitioner Concentration, MS
- Nursing, MS
- Nursing Practice, DNP
- Nutritional Science, MS
- Occupational Therapy, MS
- Occupational Therapy Doctorate, OTD
- Public Health, MPH
- Social Work, MSW

College of Humanities and the Arts

The College of Humanities and the Arts offers the following degree programs:

- Art, Art History and Visual Culture Concentration, MA
- Art, Digital Media Art Concentration, MFA
- Art, Photography Concentration, MFA
- Art, Pictorial Art Concentration, MFA
- Art, Spatial Art Concentration, MFA
- Computational Linguistics, MS
- Creative Writing, MFA
- Design, MDes
- English, MA
- Linguistics, MA (Not Accepting Students)
- Mass Communications, MS
- Music Education, MA
- Music, MM
- Philosophy, MA
- Spanish, MA
- Teaching English to Speakers of Other Languages (TESOL), MA (Not Accepting Students)

College of Information, Data & Society

The College of Information, Data & Society offers the following degree programs:

- Archives and Records Administration, MARA
- Data Analytics, MS
- Informatics, MS
- Library and Information Science, MLIS

College of Science

The College of Science offers the following degree programs:

- Applied Mathematics, MS
- Bioinformatics, MS
- Biological Sciences, MA
- Biological Sciences, Ecology and Evolution Concentration, MS
- Biological Sciences, Molecular Biology and Microbiology Concentration, MS
- Biological Sciences, Physiology Concentration, MS
- Biotechnology, MBT
- Chemistry, MA
- Chemistry, MS
- Computer Science, MS
- Data Science, MS
- Geology, MS
- Marine Science, MS
- Mathematics, MA (General)
- Medical Product Development Management, MS
- Meteorology, MS
- Physics, MS
- Quantum Technology, MS
- Science Education, MS
- Statistics, MS

College of Social Sciences

The College of Social Sciences offers the following degree programs:

- Applied Anthropology, MA
- Chicana and Chicano Studies, MA
- Clinical Psychology, MS
- Communication Studies, MA
- Criminology, Global Criminology Concentration, MS
- Economics, MA
- Economics, Applied Economics Concentration, MA
- Environmental Studies, MS
- Geography, MA
- History, MA
- Justice Studies, MS
- Psychology, Industrial/Organizational Psychology Concentration, MS

- Psychology, Research and Experimental Psychology Concentration, MA
- Public Administration, MPA
- Urban Planning, MUP

Certificates

- Accounting Fundamentals Certificate
- Advanced Accounting Topics Certificate
- Advanced Certificate in Geographic Information Systems (GIS) Certificate
- Advanced Communication(s) and Research Methods Certificate
- Advanced Global Leadership Certificate
- Advanced Social Work Practice in Gerontology Certificate
- Advanced Social Work Practice in Mental Health Certificate
- Advanced Taxation Certificate
- Affordable Housing and Community Development Finance Certificate
- Applications of Technology in Planning Certificate
- Business Analytics Certificate
- Clinical Genetic Molecular Biologist Scientist Training Program Certificate
- Clinical Laboratory Scientist (CLS) Training Program Certificate
- Community Design and Development Certificate
- Computational Linguistics Certificate
- Cybersecurity Engineering Certificate
- Cybersecurity Foundations Certificate
- Cybersecurity: Core Technologies Certificate
- Environmental Planning Certificate
- Ethics of Science and Emerging Technologies, Advanced Certificate
- Fundamentals of Cybersecurity Certificate
- Global Citizenship Certificate
- Global Philosophical Traditions Certificate
- Graduate TESOL Certificate (Not accepting students)
- High Technology Taxation Certificate
- High-Speed and Intercity Rail Management Certificate
- Higher Education Teaching Certificate
- International Taxation Certificate
- Library and Information Science Post-Master's Certificate
- Mindfulness-Based Health and Human Services Certificate
- Nursing Specialty Advanced Certificate
- Philosophy Post-baccalaureate Certificate
- Professional and Technical Writing Certificate
- Real Estate Development Certificate
- Secure Software Engineering Certificate
- Secure Test Engineering Certificate
- Six Sigma Black Belt Certificate
- Strategic Management of Digital Assets and Services Certificate
- Tax Practice Certificate
- Theory, Knowledge and Practice about Autism Spectrum Disorders Certificate (Not Accepting Students)
- Translation and Interpretation Certificate

- Transportation and Land Use Planning Certificate
- Transportation Management Certificate
- Transportation Safety, Security, and Emergency Management (TSSEM) Certificate
- Undergraduate TESOL Certificate

Credentials

- California Library Media Teacher Services Credential - now Teacher Librarian Credential
- Education Specialist Preliminary Teaching Credential: Early Childhood Special Education
- Education Specialist Preliminary Teaching Credential: Extensive Support Needs
- Multiple Subject Credential
- PK-3 Early Childhood Education (PK-3 ECE) Specialist Instruction Credential
- Pupil Personnel Services (PM-PPSC) Post-Master's Credential
- Education Specialist Preliminary Teaching Credential: Mild/Moderate Support Needs
- Pupil Personnel Services (PPS) School Counseling Credential
- Pupil Personnel Services (PPSC) Credential (Social Work)
- Single Subject Credential - Art
- Single Subject Credential - English
- Single Subject Credential - Mathematics
- Single Subject Credential - Music
- Single Subject Credential - Physical Education
- Single Subject Credential - Science
- Single Subject Credential - Social Science
- Single Subject Credential - World Languages
- Teacher Librarian Credential

Added Authorizations

- Adapted Physical Education Added Authorization
- Bilingual Authorization in Spanish
- Child Welfare and Attendance (CWA) Authorization
- Introductory Computer Science Supplementary Authorization
- Early Childhood Special Education Added Authorization (Not Accepting Students)

Graduate Policies & Procedures

- Graduate Student Catalog Rights
-

Information about course credit and number, including grades, registration and attendance is found in the Policies and Procedures section.

Graduate Student Catalog Rights

"Catalog rights" defines a specific set of requirements typically prescribed in a catalog for a specific year, which the student must satisfy to qualify for a program degree, credential, or certificate.

Graduate students may choose to qualify for graduation under any catalog year in effect from the time of SJSU admission as either a conditional or fully classified student to the time they graduate from SJSU.

If a student follows an earlier version of a program in which their department has discontinued or modified required courses, the department may authorize appropriate substitutions.

Change of Graduate Program

Official changes in a student graduate program are to be initiated by submitting a Change of Graduate Program Petition to the GAPE office. Submission of this request does not guarantee approval, as the new department must review and approve the student as a candidate for their program. The student should be aware of any additional admission requirements by the prospective program. The department must follow-up with the student request by approving the Change of Program request and returning its decision to the GAPE office. The GAPE office will then update the student's status to reflect the new program change.

If a student obtains permission to change their program or concentration after advancing to candidacy and the second program has different requirements than the first, then a new candidacy form (Petition for Advancement to Candidacy) must be filed that includes the signature of the new graduate program coordinator. Graded courses listed from the previous program candidacy form can be eliminated on the second candidacy form if not part of the new curriculum.

Switching culminating experience from Plan A (thesis) or C (creative project) to Plan B (project or comprehensive exams) or vice versa, do not require a new candidacy form. However, for Plan A or C students converting to a Plan B, any 299 units, project course units, or exam preparation course units in which credit was given must be retroactively dropped or changed to NC (no credit) grade. Furthermore, project and exam preparation courses as well as additional content courses might then be required, depending on the program. These changes all require that the GAPE office be informed by means of filing the Request for a Course Substitution for each course change. Degree requirements for the new plan must be satisfied in full. Therefore, retroactively adding a 298 (project) class, for example, in place of a 299 (thesis) class will be permitted only if all the requirements of the project have been met. The requirements for projects include a written report in every case.

Change in Classification Status

Notification of a change from conditionally classified to classified status within the same graduate program before advancement to candidacy is made to the GAPE office by the graduate program coordinator by means of the Change of Classification in Graduate Program form. Alternatively, a graduate program coordinator signature on the candidacy form indicates that the department has checked that all conditions have been fulfilled, allowing the conditional status to be lifted and establishing the classified status without the need to submit a Change of Classification form. Graduate

students must be in classified status in the graduate program to advance to candidacy. Once a student has advanced to candidacy and progressed to classified status, any conditions discovered still unfulfilled are sacrificed and can no longer be required.

Enrollment for Culminating Experience - 1290R

or Continuous Enrollment

Continuous enrollment is required of all graduate students between completion of regular courses and satisfactory completion of the culminating experience. Graduate students who receive an RP ("report in progress") grade in a thesis (299), project (often 298), dissertation (599), doctoral project (often 598), or other culminating experience course, as well as those who have completed course requirements but not the program comprehensive examination, may maintain continuous enrollment by registering for other courses or by registering for one unit of University Studies (UNVS) 1290R or departmental 1290R (Thesis/Project Supervision) through Special Session for each Fall and Spring semester until completion. In accordance with University Policy S17-5, graduate students preparing for comprehensive exams or completing a courses-only program culminating experience are included in this policy.

Graduate students who have completed their coursework but are still working on their culminating experience (thesis, project, or comprehensive exam) no longer may stop out for even one semester (Summer/Winter excluded), and they cannot be granted leaves of absence for any reasons other than military leave and severe medical issues.

Departments may require repeated enrollment in project, thesis, or comprehensive exam-preparation classes each semester until completion, thereby precluding the need for the 1290R course. There are no formal class meetings for the 1290R course. Failure to register for this \$280 1-unit course will result in a graduation hold until the unit is retroactively added.

Registration for 1290R

Registration for the 1-unit (\$280) UNVS 1290R or departmental 1290R special session course must be delayed to give students the opportunity to enroll in other courses. Students who have an RP grade in a culminating experience course, a graduation date in the current or future semester, and no enrollment in other courses will be notified after the add period by the Registrar's Office and given appointments for the UNVS 1290R or departmental 1290R. Graduate program coordinators of courses-only programs and those with culminating experiences not attached to courses with the RP grade option will need to generate appointments by submitting student names to Graduate Studies. Students with appointments may then register online through MySJSU. No permission or add code is needed. Students will have until the last day of course instruction to register for the course. To maintain their immigration status, international students are encouraged to add the course as soon as their appointments are available. Federal regulations require international students to be fully enrolled in classes within the first 30 days of the start of the semester. Those international students who fail to add 1290R within the first 30 days of the start of the semester will be out of compliance. Student F-1 status will be terminated which will result in the student's immediate U.S. departure. In each subsequent fall and spring semester, students still completing their culminating experience will have to register for this course and will be precluded from registering for any other. The RP grade in the project or thesis course remains on the official record until a culminating memo is submitted by the graduate program coordinators to the Office of Graduate Admissions & Program Evaluations (GAPE), the course instructor in which the RP was received has petitioned for a grade change, and the student has submitted the online graduation application through their MySJSU account.

The Associate Dean of Graduate Studies is officially the instructor of record for all 1290R courses and is responsible for assigning the grades as well as scheduling the courses each semester. Departments should not attempt to add 1290R courses on their own. Students may retroactively add a 1290R course by completing an online Retroactive Request for 1290R form, and paying associated tuition and fees.

More details regarding the continuous enrollment policy may be found in University Policy S17-5. Details on the RP (Report in Progress) administrative grading symbol may be found in University Policy S09-7.

For more information on required enrollment for culminating graduate students and Graduate 1290R Enrollment, view Required Enrollment for Culminating Graduate Students (1290R) on the College of Graduate Studies website.

Graduation Writing Assessment Requirement (GWAR)

The CSU Graduation Writing Assessment Requirement (GWAR) states that all students must demonstrate competency in writing skills as a requirement for graduation. Information on currently available ways to meet this graduation requirement may be obtained from the Testing Office.

Prior to Fall 2020 Semester

Graduate students enrolled in their program prior **prior to the Fall 2020 semester** may meet their Graduation Writing Assessment Requirement (GWAR) requirement in one of four ways following rescinded University Policy S94-7:

- Satisfactory completion of a baccalaureate degree at a CSU campus;
- Satisfactory completion of a GWAR course. Each graduate program has a designated GWAR course embedded within the degree requirements. Students should refer to their program's degree requirements - see a list of graduate programs on the College of Graduate Studies section of the catalog;
- Approval by the Associate Dean of Graduate Studies of a well-written, professional (peer-reviewed) publication, graduate thesis or dissertation in which the student was the sole author;
- Satisfactory completion of a discipline-specific upper-division writing course at another university judged by the Associate Dean of Graduate Studies to be equivalent in content and writing requirements to the SJSU 100W. To satisfy the requirement under this category, students are required to submit to their department graduate program coordinators a transcript (unofficial acceptable) showing completion of the substituting course and the grade received (a "B" or better is required); the syllabus of the substituting course; and original, single-authored writing samples from the course, including especially a large term paper from the course with instructor feedback visible. If the graduate program coordinator approves of the substitution for an SJSU GWAR course, the program coordinator would then petition the Associate Dean of Graduate Studies on behalf of the student. Students may not petition the College of Graduate Studies directly.

Fall 2020 Semester or Later

Graduate students enrolling in the **Fall 2020 semester or later** must follow University Policy S19-3 which requires that all graduate students demonstrate competency in written English for advancement to candidacy within a master's program. Graduate students may satisfy the Graduation Writing Assessment Requirement (GWAR) in one of three ways:

- Satisfactory completion of a GWAR course. Each graduate program has a designated GWAR course embedded within the degree requirements. Students should refer to their program's degree requirements - see a list of graduate programs on the College of Graduate Studies section of the catalog;
- Approval by the College of Graduate Studies of a professional publication written in English for which the candidate was a primary author.
- Completion of a master's or doctoral program with a substantive writing requirement at an accredited university in which the primary language of instruction is English unless a department requires additional documentation of writing proficiency.

Candidates should be aware that each department may establish its own criteria within these policy guidelines, and candidates must abide by the department decision. By policy, each program has identified a GWAR certified course which can be found here. Thus, even if a student has satisfied one of the criteria above, the department must

approve the waiver and can require that its GWAR-satisfying course still be taken. Waiving the program GWAR requirement will require the addition of an elective selected in consultation with the graduate program coordinator. Graduate courses cannot be taken for credit by examination.

Open University & Special Session

Also see the Alternative Enrollment Programs section of the catalog.

Open University

Open University, often known elsewhere as extended education, is set up primarily as an option for community members to take college courses. It is attended by non-matriculated, post-baccalaureate students seeking to gain future admission to a SJSU graduate program or who wish to take classes to prepare for a professional degree program, such as medicine. It can also be part of the program-of-study mechanism by which scholastically disqualified SJSU graduate students can gain university reinstatement (see section on Program of Study). Non-matriculated students who enroll only for Open University courses are reminded that they must apply for admission to the university and graduate program and complete other details of matriculation if they wish to obtain a degree or credential from SJSU.

Enrollment in Open University courses is governed by specific policies, as follows:

- Fees differ from those in regular and special sessions.
- Open University enrollment in a given graduate class is permitted only with instructor and department chair or school director approval and only after reasonable efforts are made to provide full enrollment opportunities to regularly matriculated students.
- Matriculated students may not take Open University courses. This restriction also applies to formerly matriculated students who have gone out of matriculation by stopping out or being disqualified, unless they receive special permission from the Associate Dean of Graduate Studies.
- Letter-graded or CR/NR courses may be taken through Open University, with the exception of supervisory courses (such as independent study courses and project or thesis courses).
- Either regular (state-support) or special (self-support) classes may be taken through Open University if all other requirements are met.
- Open University course enrollment in 200-level courses is only open to holders of baccalaureate degrees who meet course prerequisite requirements. Neither disqualified students nor those denied admission into a graduate program for reasons other than limitations imposed by enrollment caps are permitted to enroll in 200-level courses.
- Open University courses do not qualify for residence credit toward a master's degree, as specified by Title 5.

For Open University Courses planned for transfer into a master's or doctoral degree program, the following rules apply:

- Upper-division (100-level) and graduate (200-level) Open University courses may be applied to a master's or doctoral degree program when 1) the student has obtained approval from the program's graduate program coordinator or department, and 2) the Open University units add up to no more than 30% of the required graduate degree program units. The total allowable Open University units for transfer should not exceed 30% of the graduate degree program, if these courses are the only courses used for transfer credit. Note, that if courses from external institutions are approved for transfer, the total units from external course transfers and Open University course transfers combined must not exceed 30% of the graduate degree program.
- Upper-division (100-level) Open University courses taken as part of a Program of Study for the purposes of reinstatement after disqualification may be applied to the graduate program if they are listed on the student's approved candidacy form and are approved by the graduate program coordinator for use in the graduate

degree program. Courses taken by graduate students during a Program of Study via Open University do not count toward the 30% transfer limit.

All upper-division (100 level) and graduate-level (200 level) courses, **including SJSU Open University courses taken while in a graduate (GRAD) career**, will be used in the calculation of SJSU cumulative GPA. Those taken in the post-baccalaureate career (before matriculation and enrollment in the semester admitted) are also counted in the candidacy GPA if transferred into the graduate program.

Special Session

Special session is often confused with Open University. Although both are administered by Professional and Continuing Education (PaCE), special session programs and open university course offerings are different means for registering into graduate courses.

Special session classes are offered via different delivery modes or by schedules different from the regular session term. Matriculation is required for special sessions courses. Credit earned in 100-level, 200-level, or 300-level special session courses at SJSU is entered on the matriculated graduate student's record as graduate credit, provided the student holds an acceptable baccalaureate degree from an accredited institution at the time of enrollment in the courses. Courses taken through special session receive residence credit.

For further information concerning special sessions and policies, contact Professional Education and Continuing Education (PaCE).

Facilitation of Graduation

Pursuant to Title 5, Section 40411, and Presidential Directive (PD) 2009-05, undergraduate or graduate students are precluded from enrolling in any additional state-supported courses when that student has already met all necessary requirements for the degree for which that student is matriculated. Moreover, students who have met all requirements for graduation prior to any semester in which they are enrolled will be permitted to drop all courses for which they are registered, with little or no penalty, and to graduate at the next available date. Students who have earned more than enough units to graduate but have some remaining requirements to complete will be advised and precluded from registering in any courses other than those required for a timely graduation.

Repeat Policy

University Policy F08-2 on course repetition stipulates that graduate students may repeat a maximum of 9 units in their graduate careers, regardless of the number of units required in a degree program. This total does not include classes in the catalog that are designated repeatable for credit. A graduate student may repeat any 100-level or 200-level course in which a grade below a "B," including an "NC," "WU" or "IC," was received in the first attempt. The student's academic record will indicate the course as repeated and the grade earned. Units attempted and grade points earned for both the original and repeated course will be calculated for both the program and cumulative GPA. Additional units gained by repeating a given course will not contribute to the degree total. Graduate students and graduate coursework (200-level courses) are not eligible for "grade forgiveness."

Courses on the approved candidacy form in which a grade of any kind has been earned cannot be removed from the candidacy form; the grades will be averaged with other courses even when compensated for by additional coursework. Courses listed on the candidacy form in which grades of "NC," "I," "IC," "RP," "RD," or letter grades below "C" have been recorded will prevent graduation until completed, repeated, or compensated for in another way. This is also true of courses in programs that have special grade requirements beyond those of the university standard, e.g., requirement of "B" grades in all core classes.

SJSU (only) courses can be repeated when they have gone beyond the prescribed time period for completion of master's or doctoral degree requirements, which is seven or five years, respectively. Teaching credential courses cannot be repeated if the 7-year limit is exceeded.

See Repetition of Courses for more information about registering for a class you are repeating.

Time Limits

For master's students, Section 40510(b)(2), California Code of Regulations, Title 5, Education, requires that courses in completed master's degree programs be no older than seven years at the time of the degree conferral. The seven-year period is counted from the end of the semester in which the course was completed. Thus, no more than seven years may elapse between the time the first course in a graduate program is completed and the time the last course in the program is completed. Candidates have the following options to revalidate a course:

- Repeat the outdated course with a passing grade but without credit. The new grades will be factored into the GPA for graduation, and all grade requirements, such as the 3.0 minimum GPA, will still be in effect.
- Under some circumstances, another course (one already completed or to be taken) may be used to substitute for an outdated course. Permission for the substitution must be obtained from both the program's graduate program coordinator and the Associate Dean of Graduate Studies. This practice is highly discouraged, as it violates the rule that completed courses may not be removed from the candidacy form. If the original course is available for enrollment, it is unlikely that permission will be granted.
- Revalidate the outdated SJSU course by examination. Revalidation of courses is governed by University Policy S17-7. A student may revalidate a maximum of 9 units of a 30-unit master's degree program, or 12 units for a program with more than 30 units. Only courses in which a student has earned a "B" or better may be revalidated. Permission to revalidate from Graduate Studies or from GAPE is not required; examination can proceed and the results communicated to the program evaluator at the GAPE office by the form entitled Request for Course Revalidation - see the GAPE Forms. Course work completed at other institutions is not eligible for revalidation, but transfer courses taken at SJSU may be revalidated. Courses designated CR/NC, including supervisory courses such as project and thesis courses, seminar courses, independent study courses, and internship courses cannot be revalidated.

Veterans who are candidates for graduate degrees and who have had their graduate programs interrupted by military service may petition through the Associate Dean of Graduate Studies to extend the time limit imposed by the above regulations by the amount of time spent in military service. Nevertheless, students in this situation should apply for formal leaves of absence through the University Registrar, thereby making it unnecessary to contact the College of Graduate Studies.

For doctoral students, Title 5 stipulates that all degree requirements must be completed in five years. The Associate Dean of the College of Graduate Studies should be petitioned to extend the time for completion of the requirements if 1) the extension is warranted by individual circumstances and 2) the student demonstrates current knowledge of research and practice in their field of study. Doctoral candidates are encouraged to check with both their graduate program coordinator and Associate Dean of the College of Graduate Studies for more information specific to their program.

Transfer Credit

Students who have completed coursework at other regionally accredited colleges or universities may be eligible to apply credit toward master's degree requirements at SJSU. To be transferable, the coursework must have been taken at a regionally accredited U.S. university, or accredited international institution, whether through regular session, special session, online programs, or extension. To be transferable, courses must have been taken within seven years

(masters programs) or five years (doctoral programs) from the time of posting of the grade for the course to the date of conferral of the graduate degree from SJSU.

As stipulated in University Policy S13-8, not less than 70% of coursework required for the graduate degree must be completed in residence. For example, a maximum of 9 units can be transferred into a 30-unit graduate program. This total includes all transferred classes, including those from Open University and the SJSU undergraduate career. Transfer work from any source may be applied toward the degree program only if it is approved by the graduate program coordinator. Those taken at SJSU, whether through Open University or as a matriculated undergraduate, may be revalidated in accordance with the rules on revalidation if surpassing the 7-year or 5-year limit on course viability. Those taken at any institution other than SJSU cannot be revalidated.

No courses may be transferred into the graduate program if taken during the undergraduate career at another institution. Similarly, courses in a graduate (master's, PhD, or other) degree program in which the degree was awarded also cannot be transferred for credit. However, if the graduate degree was not awarded at the other institution, up to 30% of the coursework required for the master's degree at SJSU can be transferred. Note that letter-graded courses from previous master's degree programs taken at SJSU may be included up to a total of one third of the current degree total (i.e., 10 units in a 30-unit program) if approved by the graduate program coordinator. If a course was taken as part of a prior SJSU graduate degree program that was not finished (thus there was no award of degree), then the courses qualify for transfer credit. Students earning their undergraduate degree at SJSU and taking graduate-level courses should review the section on Graduate Credit Earned by SJSU Undergraduate Students.

For university approval of transfer units up to the 30% limit, the courses are entered in the "Transfer Courses" section of the Petition for Advancement to Graduate Candidacy [pdf]. The graduate program coordinator has full authority to allow or disallow transfer credit for those courses that meet the university requirements of eligibility. The signature of the graduate program coordinator on the candidacy form is sufficient to indicate departmental approval of the courses without additional forms. If the courses meet all of the requirements stipulated above, the university will accept the courses for advancement to candidacy and for graduation requirements. Credit is awarded for transferred courses of all categories, but grade points are not included in the SJSU cumulative GPA for transferred courses other than those from the SJSU Open University program taken in the GRAD career. Approved transferred courses taken in post-baccalaureate or graduate SJSU Open University may be included in the program GPA calculation for advancement to candidacy or graduation. Any approved transferred course must have an earned grade of "C" or better.

Official transcripts for all courses transferred from another university, if taken prior to application to the SJSU graduate school, must have been submitted directly to the GAPE office during the student's initial application to SJSU. Failure to have provided those transcripts precludes the later transfer of the courses. If the courses were taken or grades for them were posted after the application process, then the transferred courses must subsequently be verified by official transcripts sent to the GAPE office from that university at the time of transfer; failure to provide transcripts will result in a denial of advancement to candidacy and/or award of degree.

Research Policies and Procedures

Institutional Review Board (IRB)

Human Subjects Research

The IRB reviews all research protocols involving human subjects. Students and faculty are required to submit a research protocol for IRB review and approval before beginning any data collection from participants if their work entails research involving human subjects. Instructions, forms, and templates can be found at the IRB website.

Office of Research
IRB Coordinator
408-924-2479
www.sjsu.edu/research

Animal Care and Use Committee

If the dissertation includes research activities involving vertebrate animals or select invertebrate species, the care and use of animals or their tissues must be approved by the SJSU Institutional Animal Care and Use Committee (IACUC). Information concerning IACUC requirements and procedures is available from the IACUC Coordinator and on the IACUC website. Animal research approval from SJSU must be obtained prior to data collection even if the work is done in conjunction with another institution from which approval has been granted. SJSU prohibits retroactive approval of animal research that is considered ongoing or completed. The official letter of protocol review, obtained with IACUC approval, must be submitted along with the dissertation whether as an appendix or as a separate document. Failure to submit the necessary documentation can result in a delay or denial of the dissertation by the College of Graduate Studies.

The Institutional Biosafety Committee

The Institutional Biosafety Committee (IBC) reviews research activities involving hazardous biological agents, recombinant or synthetic nucleic acid molecules, materials derived from humans and nonhuman primates, toxins, select agents, or agents of dual use research concern. The IBC provides oversight for biological safety and ensures compliance pursuant to the NIH Guidelines [pdf] and University policies. University faculty and students intending to perform research under the above areas must submit a Biological Use Authorization (BUA) application for IBC review and approval before initiating the research. See the BUA page for more details on submitting BUA for approval.

Copyright Permission

If a student copies a figure, table or a significant section of someone else's work and it is believed that the use of these copyrighted materials is beyond that permitted by "fair use," the student will be required to obtain separate written permission letters from the publishers or authors of the works cited. It must be indicated in the text or figure caption within the dissertation that the material is "copied with permission." The student should plan well so that permission letters will be received in time. If letters of permission are not submitted with the final copies of the dissertation, the College of Graduate Studies will not approve the dissertation, and University Microfilms International (UMI) will not microfilm the work.

The permission letters should be included with the initial submission of the thesis as well as when the thesis is submitted for publication. For questions about the process, including whether permission is required for a particular insertion, contact the thesis coordinator at the College of Graduate Studies.

Latin Honors

Not Available for Graduate Students

Latin honors at SJSU are reserved, for those earning baccalaureate degrees per University Policy, S17-13. Because graduate students are required to maintain a minimum cumulative GPA of 3.0, all finishing graduate students would receive honors. Thus, they are not considered for receipt of Latin honors. Individual programs are free to award other forms of recognition to outstanding graduate students.

Academic Standing

Academic Notice | Administrative Academic Probation | Disqualification | Discontinuation | Appeal | Reinstatement | Readmission

Students are strongly advised to review University Policy S16-16 for more information on Academic Standing.

Academic Notice

Graduate students enrolled in a degree, credential, or advanced certificate program are subject to academic notice if their SJSU cumulative GPA falls below 3.0 (grade of "B" on a 4.0-point scale) in all units attempted subsequent to matriculation in either conditionally classified or classified status. Lower division courses (numbered 01-99) are listed on the transcript but cannot be used for graduate degree credit nor are they included in the GPA computation. Courses taken through SJSU Open University before matriculation will also be listed on the transcript and may, with graduate program coordinator consent on the candidacy form, be used toward the graduate degree if adhering to the transfer course limitation and residency requirement. Such courses will be figured into the GPA for advancement to candidacy and for the candidacy GPA computation at the completion of the program. All upper-division (100 level) and graduate-level (200 level) SJSU Open University course grades taken while in a GRAD career will be included in the SJSU cumulative GPA, which is used to determine academic standing for degree conferral. However, courses transferred into the graduate program from other institutions or from the SJSU undergraduate career will not count in the cumulative GPA computation.

At the completion of the degree program, should the SJSU cumulative GPA fall below 3.0 at the same time that the candidacy GPA is above 3.0, the student's academic standing will reflect the former only. In this unusual circumstance, the student or program must make the Associate Dean of the College of Graduate Studies aware of this discrepancy.

Each Spring, Summer and Fall term while on academic notice, the student must achieve a 3.0 GPA in the semester's work to avoid academic disqualification. To avoid disqualification, at least one graded course must be taken each Spring and Fall semester, while on academic notice. The student remains on continued academic notice as long as each individual term's work is equal to or above the 3.0 threshold but the overall GPA is still below 3.0. Academic notice is cleared when the SJSU cumulative GPA rises to 3.0 or better in any subsequent Spring, Summer or Fall term.

Graduate students are eligible to repeat courses with letter grades lower than "B" or with grades of "NC," "WU," or "IC" up to a total of 9 units, no matter how many units there are in the individual degree program. Exceptions may be made by the Associate Dean of Graduate Studies in this course repetition limit with respect to high unit clinical or field courses, as long as the exceptions do not violate academic notice and disqualification policies established in the major (see sections on Administrative Academic Probation and Disqualification). Repeated and elective courses may not be taken through Open University. Elective classes already taken in the degree program may be added to the candidacy form by means of the Request for Course Substitution in Graduate Degree form. However, all courses taken will be calculated in the GPA because any course taken with its associated grade cannot be removed from the candidacy form. The total allowable units that can be added as either repeated classes or substituted electives can be no greater than 30% of the total number of units for the individual degree for the entire graduate career. To clarify, in a 30-unit degree program, a student may add electives or repeat classes only up to a total of 9 units.

Failure to Achieve a 3.0 Grade Point Average on Completed Graduate Degree Program

If a master's candidate does not complete the graduate degree program with a minimum 3.0 GPA in both the overall coursework and the candidacy coursework, the student's major department may terminate the candidacy or permit completing additional courses in an attempt to raise the GPA in the program to the minimum 3.0 threshold. Elective courses may be added to the candidacy form if approved by the graduate program coordinator. Alternatively, courses can be repeated up to a limit of 9 units (per University Policy F08-2). In the entire graduate career, the combination of added elective units and repeated units cannot exceed 30% of the total number of units in the major. Failure to raise the candidacy and cumulative GPA to 3.0 after completing this additional coursework will result in a termination of the student's candidacy and an inability to earn the degree. Thus, the student would be academically disqualified without the ability to be reinstated by normal means.

Credential candidates who fail to achieve a 3.0 GPA upon completion of the credential program will be precluded by the department from attempting additional coursework and therefore not be recommended for an award of a credential by the State of California.

Administrative Academic Probation

Per Sections 41300.1 Title 5, graduate students may be placed on administrative academic probation or may be disqualified by appropriate campus authorities for unsatisfactory scholastic progress regardless of cumulative grade point average or progress points. Such actions shall be limited to those arising from repeated withdrawal, failure to progress toward an educational objective, and noncompliance with an academic requirement. Therefore, regardless of the cumulative GPA, administrative academic probation or disqualification can be imposed by the university.

Despite maintaining an SJSU cumulative GPA of 3.0 or better, a graduate student's academic performance in the major may fall below the minimum standards established in that major. In these cases, while students remain in overall good standing with the university, they are subject to administrative academic probation and disqualification from the graduate major.

In most cases, a direct reassignment from good standing in the major to disqualification from the major is prohibited. In other words, at least one semester of administrative academic probation in the major is required prior to disqualification from the major. By the same token, there must also be a way for a student to return from probationary status to good standing that should be clearly documented. Exceptions to these regulations are described below under Disqualification - Administrative Academic.

The department and university may impose administrative academic probation for any of the following reasons:

1. Failure to progress satisfactorily toward the degree or other program objective, including that resulting from assignment of 9 units of "NC," when such failure appears to be due to circumstances within the student's control, failure to pass writing requirements, or failure to take a reasonable number of courses in the student's own degree program.
2. Failure to comply, after due notice, with an academic requirement or regulation that is routine for all students or a defined group of students (examples: failure to complete a required CSU or campus examination, failure to complete a required practicum, failure to make satisfactory progress in the academic program, failure to put together a graduate committee of qualified individuals in programs that require a committee).
3. Failure to achieve a set of academic standards of the department. For example, a program might require the achievement of grades of "B" in every class or in particular classes with a stipulated number of repetitions permitted. Similarly, an acceptable standard would be to require a "CR" in field, student teaching, or internship courses with a stipulated number of "NC" grades allowed for repetition.
4. Programs may restrict a student to two attempts of any course offered by the program. Cohort programs may require that a minimum number of courses/units be taken each semester in order to best use resources or to ensure that the program is completed while student knowledge is still current. A maximum number of units can be set for students on probation.

When such action is taken, the student will be notified in writing and provided with the conditions for removal from probation and the circumstances that would lead to disqualification should probation not be removed. When notifying the student, the department must also inform the College of Graduate Studies and the Office of the Registrar.

Disqualification

Students are strongly advised to review University Policy S16-16 for more information.

Academic Disqualification

A graduate student who is on academic notice is academically disqualified if they fail to earn a term 3.0 GPA in any subsequent semester that they have been placed on academic notice and their cumulative GPA remains less than 3.0. This requires enrollment in at least one letter-graded course each Spring or Fall semester (but not Winter or Summer term) that the student is on academic notice. Teaching credential candidates are subject to the GPA dictates of the State Department of Education. Credential candidates will be notified of those requirements by their department within the College of Education in which they are seeking their credential preparation. At this time, the minimum GPA requirement matches that of the graduate division as a whole, that is, the 3.0 level. Credential candidates who fail to meet this standard are academically disqualified and are not eligible for reinstatement. Similarly, if at the time of completion of all credential requirements, a student's candidacy GPA or cumulative GPA is below the 3.0 threshold, the student is academically disqualified and will not be afforded the option of repeating credential courses to raise the GPA.

For master's candidates who complete all minimum degree requirements but fail to achieve a 3.0 GPA, the department may exercise its option to terminate the candidate. The department may also allow the student to repeat classes within the university limit of 9 units per graduate career or to add elective courses. The total units in the added courses and repeated courses (100 and 200 level coursework) cannot exceed in the entire graduate career 30% of the units of the degree program's total. If a student fails to raise the candidacy and SJSU cumulative GPA to 3.0 after these measures, they are academically disqualified without a possible reinstatement.

In many cases, students may petition for reinstatement following a first disqualification. Departments have the option of reinstating or refusing to reinstate a graduate student, and, if reinstatement is successfully achieved, the student is guaranteed readmission to the program.

After a second disqualification at the graduate level, reinstatement will not be granted and the student's candidacy will be terminated.

Administrative Academic Disqualification

Upon notification by the coordinator of the graduate program in which a student has been placed on administrative academic probation, the student may be administratively academically disqualified by the Associate Dean of College of Graduate Studies if the conditions for removal of administrative academic probation are not met within the period specified.

As indicated in the section on administrative academic probation, a probationary period must normally precede a disqualification. However, exemptions to this general rule include the following:

1. In clinical courses, laboratory courses, student teaching assignments, or other types of programmatic requirements, there may be such serious concerns about the safety or well-being of the student, other students, clients, patients, and so forth that repetition of the courses is not reasonable. For such courses or programmatic experiences, departments may establish "no repeat" policies, i.e., a course may not be repeated if not passed on the first attempt. In clinical or lab settings in which safety or well-being are severely compromised, an instructor may disenroll a student from the course, which may lead to disqualification from the major.
2. A program can disqualify a student without a probationary period for behavior that fails to comply with professional standards of conduct appropriate to the field of study. This conduct could occur in or out of class. It must be highly egregious for the disqualification action to be taken. Generally, a department will base its decision on a student's failure to comply with a written set of professional standards in the field of study.
3. Conditional acceptance to a program is, in effect, acceptance under probation in the major. Typically, a specified set of courses or requirements must be passed prior to attaining good standing in the program. There may be time limits or unit limits established to satisfy the conditions, which, if not met, may lead to disqualification from the major degree program without an intervening term on administrative academic probation. Cohort programs must provide in their policies a reasonable accommodation for students who must stop out for legitimate reasons.

In most cases (unless stipulated by the program in writing), graduate students administratively academically disqualified from their majors have no means for reinstatement. However, unlike academic disqualification, reinstatement and readmission are not absolutely necessary for continuation at the university after administrative academic disqualification. If a student finds another program willing to accept him or her within one semester, a Change of Graduate Program Petition can be filed with the office of Graduate Admissions and Program Evaluations and enrollment can resume following formal acceptance into the new program. Graduate students cannot be categorized as "undeclared", and thus a student must be accepted into some program to register for courses at the university other than through Open University. If more than one semester elapses from the point of disqualification, the student will be considered to have stopped out of enrollment and will be required to apply for readmission if a second department indicates willingness to allow a transfer.

International Students & Disqualification

To maintain their legal status in the U.S., international students must be matriculated within a degree program. After disqualification from SJSU, international students must transfer to another institution to maintain their legal status. Enrollment in Open University alone does not qualify them for the immigration document needed to remain in the U.S. Disqualified international students must speak with an international student advisor in the International Student and Scholar Services (ISSS) Office as soon as possible after receiving notification of their disqualification.

Discontinuation from the University

Students who fail to register for classes in two successive semesters are placed in a discontinued status and are no longer matriculated at the university. Discontinuation requires readmission to the university and program before a student may be permitted to enroll again. This policy also applies to students who leave the university after having registered for classes but who do not officially withdraw, or students who withdraw from all courses after the semester drop deadline. The courses will be assigned a grade of "WU" (denotes unauthorized drop or withdrawal). No personnel actions, grades, or transcript services will be permitted until all financial obligations, such as unpaid fees, have been settled. If the student fails to return the semester immediately following withdrawal, reapplication for admission will be necessary at Cal State Apply.

The exception to this policy is for students who file for a formal leave of absence. See the description of the options and regulations governing leaves in the Leave of Absence section.

Appeal of Disqualification and Probation

Students may appeal their probation or disqualification by petitioning the Academic Disqualification and Reinstatement Review Committee after the programmatic appeal process has been exhausted. The student should begin the appeal process by consulting with their graduate program coordinator. The appeal, in writing to the Associate Dean of the College of Graduate Studies, should contain a description of actions by the department contrary to departmental rules or university policy, or an explanation of extenuating circumstances that led to the action.

In cases of extenuating circumstances, the student must present evidence that the circumstances were beyond his or her control, that they disrupted previously satisfactory scholastic performance, and that they no longer affect the student's academic work. The Associate Dean of Graduate Studies has the authority to deny further appeal on the basis of reasonable grounds for appeal. If grounds exist, a subcommittee of the Academic Disqualification and Reinstatement Review Committee will in turn hold a formal hearing to confirm or rescind the probation or disqualification. Please review University Policy S16-16 for complete details.

Reinstatement From Disqualification

Following a notification of disqualification, a student's graduate program coordinator may file a Graduate Petition for Reinstatement. There are four categories by which a student can be reinstated: extenuating circumstances, special consideration, grade change and program of study. Please note that only the graduate program coordinator can initiate this form and students should work with their program coordinator when determining which reinstatement category is applicable.

Extenuating Circumstances

Similar to the appeal process for probation or disqualification, a request for reinstatement due to extenuating circumstances must meet the conditions indicated above for that process. The Graduate Petition for Reinstatement is submitted along with evidence of the circumstances and their role in the decline in scholastic performance.

Special Consideration

This category is reserved for individuals who have been absent from the university for five or more years and who have in that time achieved a renewed sense of purpose through job activities or through increased maturity that would prompt a greater chance of academic success. Often this request is accompanied by a switch in major from that in which the disqualification occurred.

Change of Grade

If a grade that was changed results in an increase in the semester GPA or in the cumulative GPA to 3.0 or above, the student may qualify for reinstatement in this category. In addition, retroactive (after the last day of classes) actions by students, such as completion of Incomplete ("I") grades or course drops, can also raise the SJSU cumulative GPA. The Change-of-Grade Form must be submitted by the department office directly to the Office of the Registrar by the drop deadline of the following spring or fall semester. Extension of this deadline will be considered only when there is documentation of the student's attempt(s) to contact both the instructor and the department chair and only when the late submission of the Change-of-Grade Form is clearly shown to be beyond the student's control.

Program of Study

The most common grounds for reinstatement is the completion of a program of study. A student must confer with the graduate program coordinator to receive approval for reinstatement and to develop a schedule of classes appropriate to the student's major. The courses in the program of study must amount to a minimum of 6 and maximum of 9 units per semester, and all must be taken in a single semester. They must be letter graded, upper division (100-level), and taken through SJSU Open University. The 100-level courses may or may not be part of the graduation requirements for the student's degree program. The program coordinator may require more than 6 units of coursework. Graduate (200-level) courses are not permitted on the program of study, and disqualified students cannot enroll in 200-level courses. Under no circumstances will courses be accepted that were taken prior to approval of the program of study via submission of the Graduate Petition for Reinstatement. Also precluded from the program of study are courses taken at another university, 300-level or 400-level or 500-level courses, and lower division courses.

If the student plans to pursue a different degree program upon readmission to the university, the program of study must be applicable to the new major, be developed in conjunction with the graduate program coordinator of the new major, and demonstrate the student's capacity to complete the new graduate degree requirements. If a course on an approved program of study becomes unavailable, another reinstatement petition must be submitted and approved immediately after enrollment in a substitute course. Once the program of study has been completed such that the student earns a minimum grade point average of 3.3 ("B+") with no course grades lower than a "B," the student will be reinstated and, after reapplication to the university, readmitted to the university and department. Should the student fail to achieve the minimum GPA of 3.3 in the program of study, additional programs of study are permissible.

with entirely new classes and consent of the graduate program coordinator of the major the student intends to pursue.

Reinstatement is not allowed for a second disqualification. Unless extenuating circumstances can be cited that result in rescinding the second disqualification, a Graduate Petition for Reinstatement will not be accepted from students who have been disqualified more than once. If the student plans to pursue a different degree program upon readmission to the university, the program of study must be applicable to the new major, be developed in conjunction with the graduate program coordinator of the new major, and demonstrate the student's capacity to complete the new graduate degree requirements.

Unless the disqualification is rescinded as above, reinstated students must apply to the university and department for readmission. Reapplication via Cal State Apply can be done during the semester in which the program of study is underway or in which the reinstatement petition is being considered. The application will be placed on hold at Graduate Admissions and Program Evaluations until the program-of-study grades are posted and the student is reinstated. A department is expected to readmit students who have successfully completed programs of study signed off by that department. Disqualified, reinstated students seeking readmission are, nevertheless, subject to the same enrollment limitations and admission application requirements as all other applicants. Learn more about the reinstatement processes.

Readmission

A graduate student readmitted after academic disqualification may still retain a sub-3.0 GPA upon reentry and, therefore, remain on continued academic notice during their first term back until the cumulative graduate GPA is raised to a minimum of 3.0. To avoid a second disqualification following reinstatement, a student must achieve a term GPA equal to or above 3.0 in any Spring, Summer, or Fall term while on academic notice. If a GPA equal to or above a 3.0 is not achieved, the student will be disqualified a second and final time. A student is removed from academic notice once the cumulative GPA meets or exceeds 3.0.

While disqualified, the graduate student has no capacity, outside of possible degree-satisfying courses taken as part of a program of study, to raise the GPA. Unlike an undergraduate student in disqualified status, courses taken by a graduate student through Open University or at other institutions during this period are not counted in university GPA calculations, except in the case of the program of study courses that are applicable to the degree program. Disqualified students lose their privileges for course registration and thus are effectively removed from the university.

Readmission differs from reinstatement. An academically disqualified student may petition for and be granted reinstatement; however, class enrollment requires that they also be readmitted into the university. Readmission is possible only after proper reinstatement is achieved, formal reapplication through Cal State Apply is submitted, university review is complete, and acceptance by the department graduate program is confirmed. This applies whether the student is returning to their previous program or if a student has been academically disqualified and is returning to begin a newly approved program. The student can reapply as early as the term following a first disqualification, even if reinstatement has not yet been achieved. The university will make special arrangements, before an official term begins, for former students who wish to return to their studies. The Associate Dean for the College of Graduate Studies should be contacted if these circumstances apply.

General Information and Student Messaging for 1290R Enrollment

Per University Policy S17-5, graduate students with an RP grade in a **thesis (299), dissertation (699), or project (often 298)** course in the Spring 2012 or later semester are required to enroll in the 1-unit CR/NC course, 1290R, each semester until degree completion for the purpose of continuous enrollment. Enrollment **must be repeated each semester until degree completion** except in cases in which the department requires repeated enrollment in the original project or thesis course. There are no class meetings for the course as it is supervisory in nature; however, there will be a \$288 fee associated with 1290R. "Stopping out" or a voluntary absence from the university will not be permitted unless a leave of absence petition is approved for either medical or military reasons. Failure to register will result in a hold being put on graduation until the unit is retroactively added, and a late fee will be associated with the retroactive action. To retroactively add any previous semesters in which a 1290R course was not taken, use the linked DocuSign form.

Professional & Global Engagement is responsible for scheduling 1290R:

- 1290Rs are **special session courses**, and students must have special session registration appointments (i.e., time/date window) to add via MySJSU.
 - The College of Graduate Studies oversees **both** grading and roster management for all 1290R courses (both UNVS 1290R and any department generated 1290R [e.g. BIOL 1290R]). The Associate Dean of Graduate Studies serves as the instructor of record for all 1290R courses, no matter the prefix.
 - One class for each department with an **enrollment cap of 100 students** can be generated.
 - UNVS 1290R is used only in cases in which the **department has not designated its own 1290R**. Tuition generated in this case does not go to the department.
- Students can add 1290R only if they are not enrolled in any other courses for the current semester.

Appointments to enroll for 1290R begins the day following the last day to add courses.

 - Because 1290R is scheduled through Special Sessions, and the Office of the Registrar delays appointments to allow students to register for other courses, 1290R registration is delayed until the day following the last day to add (**see example email sent to students below**).
 - Domestic students** have until the **last day of instruction** (11:59 pm) to enroll in 1290R.
 - Note: International students in F-1 status: Federal regulations require that students enroll in 1290R within the **first 30 days of the start of the semester** although they will not be able to complete the 1290R enrollment until they receive their appointment. Students who do not complete enrollment during that time will be out of compliance and their F-1 status will be terminated, resulting in immediate departure from the U.S. Therefore, it is critical that they do not delay in registering for 1290R once they have an appointment. Please contact International Student and Scholar Services (ISSS) for more information.
 - Students enroll in 1290R just as they would a regular course through their MySJSU Student Center (see the PDF Instructions).
 - Any 1290R enrollments after the last day of instruction become **retroactive adds**. Students will then be required to add 1290R retroactively for the course once the deadline has passed.

The Office of the Registrar is responsible for screening students, messaging, and posting grades for 1290R eligible students:

- Registration appointments are assigned to graduate students based on the following criteria:
 - Students who have an "RP" grade Spring 2012 or thereafter in a thesis/project course or applied to graduate in the current semester and/or following two semesters;
 - Students who are not enrolled in any courses for the current semester;
 - Completed all degree requirements other than thesis or project.

Important Notes:

- Students who do not have a graduation date for either the current semester or two subsequent semesters, must update their graduation date. Students who have not applied to graduate or have a past graduation date will not automatically receive a 1290R appointment via messaging.

2. Students who do not have an RP course in their program, do not have any recorded status for their pending culminating experience such as comprehensive exams (*i.e.*, courses only), or have an "I" reported for their culminating experience will not automatically receive an appointment invitation from the Office of the Registrar. In these cases, the student or graduate program coordinator must contact the Associate Dean of Programs, College of Graduate Studies, in order to notify the Office of the Registrar to provide the student a 1290R registration appointment via email. The following information is required:
 - a. Student contact information (name, ID number, email, and phone number);
 - b. Program and culminating experience.

Sample Email to Students

From the Office of the Registrar after census date.

Dear Student,

A registration appointment is now available for you to enroll in your department prefix 1290R or UNVS 1290R (a 1-unit thesis/project supervisory course for continuous enrollment), as our records indicate that you have met all of the conditions below for [*current semester*]. Registration is via MySJSU, and no permission number is needed. Failure to register for this course will result in a hold on your graduation until you retroactively add the course. Please be aware that retroactively adding this course will incur a \$200 late fee.

Conditions:

1. Graduate student
2. "RP" grade issued in Spring 2012 or thereafter in a thesis/ project course or applied to graduate in [*current semester, or the following two successive semesters*]
3. Enrolled in no other courses for the current term
4. Completed all degree requirements other than thesis or project

Questions can be directed to Dr. Jeffrey Honda, Associate Dean of Programs, College of Graduate Studies.

For other Graduate policy guidelines, visit the College of Graduate Studies Policy website.

Graduate Processes for Reinstatement

Reinstatement Processes

Per S16-16, academically disqualified students may apply for reinstatement. Academic disqualification occurs when graduate students on academic notice or administrative academic probation earn a fall, or spring term GPA below 3.0. The disqualified status is shown on the transcript. Graduate students disqualified from the university for the first time can petition to be reinstated, unless otherwise disallowed by an accrediting body or other governing agency.

Reinstatement is a process separate from readmission. Students must file an application for readmission with Cal State Apply through GAPE to register for classes following reinstatement. Application for readmission can be done during the semester in which the program of study is underway or in which the reinstatement petition is being considered. Please note the process below for students wishing to apply for reinstatement:

1. Students who are disqualified from the University will receive notification from the Office of the Registrar. Once this occurs, the student may immediately apply for reinstatement. Your Graduate Program Coordinator must initiate the Graduate Petition for Reinstatement.
2. Students must complete a Graduate Petition for Reinstatement with their graduate program coordinator and obtain all necessary signatures and documentation. Consideration is given for:
 - a. Extenuating circumstances
 - b. Special Consideration
 - c. Change of grade
 - d. Program of Study: **Note:** because Program of Study requires taking courses the semester following disqualification through Open University, students must submit their petitions for their Program of Study by the following deadlines to ensure that they can be reinstated for the next earliest semester:
 - i. Spring March 1st (if the Program of Study is to be done during the Spring semester)
 - ii. Summer July 1st (if the Program of Study is to be done during the Summer semester)
 - iii. Fall October 1st (if the Program of Study is to be done during the Fall semester)
 - iv. Example: If a student is disqualified in the fall semester, the student can take a Program of Study the following spring semester, and if the Program of Study is successfully satisfied, and if the application cycle is still open, they would be eligible to return the following fall semester (or possibly earlier during the summer semester depending on their program).
 - v. It is the student's responsibility to ensure that documentation reaches the College of Graduate Study for final approval and meets any of the above deadlines (see sample Program of Study confirmation letter).
 - e. A Program of Study must conform to the following policies:
 - i. Courses must be letter graded, upper division (100-level), and taken through SJSU Open University or SJSU's Extended Studies winter or summer session. Graduate courses can not be used in a Program of Study.
 - ii. The 100-level courses may or may not be part of the graduation requirements for the student's degree program.
 - iii. The program coordinator may require more than 6 units of coursework but no more than 9 units.
 - iv. Courses for a Program of Study cannot be from a past term.
 - v. If the student plans to pursue a different degree program upon readmission to the university, the Program of Study must be applicable to the new major, be developed in conjunction with the graduate program coordinator of the new major, and demonstrate the student's capacity to complete the new graduate degree requirements.
 - vi. If a course on an approved Program of Study becomes unavailable, another reinstatement petition must be submitted and approved immediately after enrollment in a substitute course.

- vii. Once the Program of Study has been completed successfully with a minimum GPA of 3.3 ("B+") and no grades lower than B, the student will be reinstated and, **after reapplication to the university**, readmitted to the university and the department.
- viii. Should the student fail to achieve the 3.3 minimum GPA, additional programs of study are permissible with entirely new classes and consent of the graduate program coordinator of the incoming major.
- f. Petitions are approved by the Associate Dean of Graduate Programs and forwarded to the Office of the Registrar. In the case of denial, department and student are notified.

Readmission and Appeals Processes

1. Simultaneous to the reinstatement process, **students must also reapply for readmission to gain matriculated status once again.**
 - a. Students must reapply to SJSU using the Cal State Apply processes and meet all regular admissions eligibility criteria, pay appropriate fees, and follow the regular term application deadlines.
 - b. To meet filing deadlines, students may need to start the readmission process **before** reinstatement is complete.
 - c. GAPE will not readmit students until the transcript states that the student has been reinstated. Any requests are held until reinstatement is approved.
 - d. Note: in some cases such as extenuating circumstances and change of grade petitions, readmission is not necessary if petitions are provided in a timely manner
 - e. See sample reinstatement letter
2. Students whose petitions are denied can appeal to the Academic Disqualification Reinstatement Review Committee
 - a. Process is initiated through the graduate program coordinator
 - b. Personal Statement must be provided to the Associate Dean of Programs for the College of Graduate Studies.

Spartan Accelerated Graduate Education (SAGE) Programs

Spartan Accelerated Graduate Education (SAGE) Scholars programs are combined bachelor's and master's programs at SJSU. Programs may also satisfy requirements for a teaching credential. SAGE programs allow students to earn graduate credit while in their junior and/or senior year and in some cases, may count courses for both undergraduate and graduate credit (up to 12 units) thus reducing the number of semesters required for completion of a master's degree. For a list of approved programs, view the Majors and Programs or MyRoadmaps Catalog - SAGE pages.

Why apply to the SAGE Scholars program? View the SAGE Scholars Program flyer for more information and view current SAGE programs.

Objectives

The Spartan Accelerated Graduate Education Scholars Programs objectives are as follows:

1. To provide an accelerated route to a graduate degree, with simultaneous awarding of both Bachelor's and Master's degrees.
2. In most cases, to allow for the possibility of students' earning graduate credit for several of their senior electives, effectively decreasing the summed unit requirements for both degrees.
3. To provide a seamless process whereby students can progress from undergraduate to graduate status without having to apply through the CSU application, Cal State Apply (thereby eliminating the need to pay the CSU application fee).
4. To provide a meaningful capstone experience that in some cases integrates the senior project with the graduate thesis or project.

SAGE Admission and Graduate Career Transition

All SAGE programs must adhere to the following CSU and SJSU policy admission requirements:

SAGE admission (Step 1) requirements:

1. Students must successfully complete a minimum of 60 undergraduate SAGE program applicable units but not more than 120 undergraduate program applicable units at the time of admission into the SAGE program. Note that SAGE program eligible units are not equivalent to degree applicable units. To determine the difference between the two designations, advisors should run a MyProgress 'what if' report.
2. Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (WID/100W/GWAR) prior to admission into the SAGE program.
3. As a scholar's program, students must have a minimum 2.5 SJSU cumulative GPA at the time of admission into the SAGE program.

Transitioning into the graduate career (Step 2) requirements:

1. SAGE students in the undergraduate career must have completed all lower division courses (designated as 0-99, including lower division general education courses and American Institutions courses) BEFORE transitioning into the SAGE graduate degree objective status. Students who have completed 120 degree

eligible units but not completed all lower division courses will be removed from the SAGE program and will complete the standalone undergraduate degree.

2. Undergraduate students must have a minimum 3.0 SJSU cumulative GPA following the completion of 120 SAGE program eligible units.

Note that these represent minimum SAGE requirements. A program may stipulate more rigorous standards for admission and/or graduate career transition than the above criteria.

Maintaining Academic Standing in SAGE Programs

SAGE scholars are required to maintain good academic standing per University Policy S16-16. Additionally, SAGE scholars are expected to meet with their SAGE advisor each semester to review their academic progress and standing. As an accelerated program, SAGE Scholars must meet a high standard in order to make timely progress towards their degrees. Thus, SAGE Scholars must maintain good academic standing the semester prior to completing 120 SAGE program eligible units and transitioning into the graduate career:

1. If a SAGE Scholar is not in good standing (i.e. are on either Academic Notice or Administrative Probation) the semester prior to completing 120 SAGE program-eligible units, and the bachelor's degree has not been issued, the SAGE Scholar will be removed from the SAGE program and returned to their stand-alone undergraduate degree program. To achieve this, the SAGE advisor must submit an Advisor Request form requesting that the student's status be converted to undergraduate status and should contact their respective Student Success Center and the Office of the Registrar to assist in the process. Students may apply to the program's graduate degree upon completion of the undergraduate degree.
2. SAGE Scholars in undergraduate status who are placed on Academic Notice for failing to maintain a 2.0 GPA are notified via the Registrar's Office and probation is noted on the transcript. These students will be removed from the SAGE program and returned to undergraduate-only status.
3. Those students in SAGE programs requiring maintenance of a higher GPA at the undergraduate level and who fail to meet that standard will be removed from the SAGE program and returned to undergraduate-only status.
4. If a SAGE Scholar is placed on notice while in graduate status for not meeting the graduate minimum GPA of 3.0 or other standards, then the SAGE Scholar must clear probationary status under the same policies that apply to the department's graduate program.
5. If a SAGE Scholar has already converted to graduate status, and leaves the program in good standing, the following will apply per F19-1, section IV:
 1. Credit earned for graduate coursework and used to complete the Bachelor's degree may not be used to satisfy unit requirements of the Master's degree;
 2. Credit earned for graduate coursework, counting toward the Master's degree, shall be available for application to an SJSU graduate program upon subsequent approval by the program and subject to University Policy S17-7, graduate course revalidation
6. Once a student is removed from a SAGE program due to either academic or administrative academic notice, they are ineligible for any SAGE program.

In general, to exit the SAGE program at any time, students should contact their advisor and/or College Success Center. Appeals may be brought to the attention of either College of Graduate Studies Associate Deans (Dr. Amy Leisenring or Dr. Jeff Honda) for review.

Application

Step 1A Department Evaluation and Admission to the SAGE Program

A student submits a department specific application for the SAGE program with the advisor. Contact the department for details, including application deadlines.

Advisor Responsibilities: Complete the SAGE Program Worksheet (formerly Career Academic Planner) from the beginning of the student's academic career (including degree applicable transfer units). Students should consider applying for their undergraduate degree upon completion of 85 units. Advisors should review the SAGE Advisor Information and SAGE Scholars Process. Once admitted to the SAGE program, advisors should confirm the student's MyProgress Report displays any applicable substitutions. Note: The MyProgress Report is the official audit for degree conferral.

Step 1B Transition into SAGE Program

The SAGE advisor will submit the SAGE Transition form with the student. This form is to be submitted twice in two different steps during the student's participation in the SAGE program. The form is to be submitted twice during the student's participation in the SAGE program.

Step 2 Transition into Graduate Classified Standing & Advancement to Candidacy

During the semester in which a student expects to complete at least 120-degree applicable units, the advisor and student submit the SAGE Transition form.

Advisor Responsibilities: During the semester in which a student expects to complete at least 120-degree applicable units, SAGE Scholars must complete Step 2. Advisors should review the SAGE Advisor Information and SAGE Scholars Process.

Deadlines

Fall Semester Start (completing 120-degree applicable units in prior Spring semester)
Opens February 1
Closes March 1

Fall Semester Start (completing 120-degree applicable units in prior Summer semester)
Opens June 1
Closes July 1

Spring Semester Start (completing 120-degree applicable units in prior Fall semester)
Opens September 1
Closes October 1

Summer Semester Start (completing 120-degree applicable units in prior Spring semester)
Opens February 1
Closes March 1

Master's Requirements

- General Graduate Policies & Procedures
- Advancement to Candidacy
- Examinations
- Master's Thesis Requirements
- Graduation
- Second Master's Degree
- Interdisciplinary Studies

Advancement to Candidacy

Students should seek advancement to candidacy as soon as possible for their given program and on the advice of their graduate program coordinator. Graduate students may submit a Petition for Advancement to Graduate Candidacy form to the Graduate Admissions & Program Evaluations (GAPE) office after satisfying the following:

- achieved classified status
- completed a minimum of nine letter-graded units with all grades "C" or higher
- fulfilled the GVAR requirement
- achieved a minimum cumulative and program 3.0 GPA, and,
- graduate within the seven-year time limit for degree completion.

Graduate students must submit their petition no later than one semester prior to graduating.

University Policy S19-3 requires that the Graduation Writing Assessment Requirement (GVAR) be fulfilled before advancement to candidacy. However, for special cases, the candidacy form may be filed during the semester in which a GVAR-satisfying course is taken

Note that Title 5 (CCR 40510) requires a minimum 3.0 grade point average for all courses to satisfy graduate degree program requirements. Should courses in the graduate degree program be completed with unsatisfactory grades, these grades must remain in the program and will continue to be computed in the grade point average of the program. Therefore, the candidacy form will record each program course repeated and the grade earned. Course grades will be effectively averaged in the GPA calculation for advancement to candidacy and graduation. Please review University Policy F08-2 for more details.

Finally, students should be aware as to which catalog year they wish to declare and use to fulfill their graduation requirements. As program requirements may change slightly over a student's course of study, catalog rights should also be discussed with a program coordinator as needed.

Graduate Degree Program

As indicated above, the Petition for Advancement to Graduate Candidacy ("candidacy form") is submitted to the GAPE office when the student is qualified to advance to candidacy. This form lists all courses and culminating experiences that must be fulfilled in order for a degree to be awarded. The proposed program must meet the following requirements:

- statement of the total number of units in the degree program.
- at least half of the units included on the form must be in 200-level courses.
- at least 60% of all units included must be in letter-graded coursework.
- at least 70% of the units included must be in residence at SJSU. Therefore, 30% or a maximum of 9 units may be transferred into a 30-unit program from all sources.

Included coursework may be entirely within the major department, or may include a combination of courses drawn from other fields accepted by the major program coordinator. If deficiencies in the student's record are identified, including prerequisites for required courses, additional coursework can be assigned by the graduate program coordinator. This coursework would not appear on the candidacy form and would not be counted in the total number of units required for the degree.

Coursework that may not be applied to the graduate degree include lower-division work (numbered 1-99), courses used to earn any prior degree (except other master's degrees at SJSU), courses taken at unaccredited institutions, directed (student) teaching, 300-level residence or 400-level Professional Education courses taken at SJSU, or courses taken over seven years previous to current degree conferral. Graduate credit by examination is not permitted.

There is no restriction in the number of units for project or dissertation research attempted, however, students completing a thesis must include at least one 299 unit on the candidacy form, and the total number of units must equal program unit requirements. Students may not receive credit for project or dissertation units unless successfully completed; instead either an RP, or NC grade will be assigned in the semester of enrollment. For courses in RP status, students may enroll in 1290R to maintain continuous enrollment until completion of their culminating experience. Students earning a NC must enroll in the course again and earn a CR to fulfill their culminating experience.

The original copy of the completed, signed Petition for Advancement to Graduate Candidacy should be submitted to the Program Evaluator in the GAPE office by the deadlines. The student will be informed by the approval or denial of the petition through the student's MySJSU account under "Other Indicators".

Program Coursework

Once approved, the candidacy form is an official contract between the student and university. It can be changed only with the permission of the graduate program coordinator via written petition to the Associate Dean of the College of Graduate Studies. Both elective and core course substitutions can be made by submitting appropriate course substitution forms. A course may not be dropped from the candidacy form, once it has been completed and approved.

If a student obtains permission to change programs and the second program has different requirements than the first one, then a new candidacy form must be filed; graded courses on the first form can be eliminated on the second form if not part of the new curriculum.

Examinations

It is university policy to require final examinations or defenses in all master's degree programs. Departmental examinations vary; they may be oral, written, or a combination of both. Students following Plans A and C are usually examined primarily over areas of their theses or projects. Plan B students are generally required to demonstrate their competence by writing in a broad field of concentration, by taking comprehensive examinations, or by completing a broad course project.

In all cases, it is the candidate's responsibility to register through the departmental coordinator of graduate studies to take all required final examinations. The candidate's program coordinator and/or the departmental graduate coordinator will provide general information concerning the nature of the examinations and recommended preparation for them.

The master's degree cannot be considered for conferral to the candidate until the major department certifies to the program evaluator at the GAPE office with the Verification of Culminating Experience memo that final examinations have been completed satisfactorily.

Master's Thesis Requirements

Time is critical during the semester thesis submission and timelines should be planned carefully to ensure that all department and university submission deadlines are met. Students must allow enough time for multiple draft preparation, committee feedback, formatting/word processing, and allowances for faculty time constraints. Students must leave time for the final reading and signing by the committee members. A minimum of two months may be needed for the entire process, and departments may require a longer period. Students must have completed all degree requirements within seven years of achieving classified standing in the master's program. All instructions for thesis formatting and submission to Graduate Studies are located in the SJSU Thesis and Dissertation Guidelines.

These instructions provide general thesis guidelines. Students should read the guidelines carefully and consult with their program coordinators concerning options for thesis formatting, and professional style guide to use. Departments may also provide students with more additional formatting instructions.

SJSU partners with the ProQuest information service for archiving theses and dissertations. Students completing theses and dissertations are required to email their committee-approved manuscript and accompanying documents to Graduate Studies according to Thesis and Dissertation Guidelines instructions.

Checking the Manuscript

The College of Graduate Studies does not serve as an editor nor content reviewer. The author and graduate committee members should carefully proofread the thesis before submission and are responsible for content and formatting.

Neither SJSU nor any of its separate offices or departments are responsible for matters concerning a student's relationships or agreements with any outside agency or individual consulted for manuscript preparation. Neither the university nor any of its offices will take part in disagreements between students and typists, editors or copy shops with regard to thesis preparation services, expected costs or billed costs. A student conducting thesis research off site, for example at a local company, must be free to include all of it in the thesis. SJSU's legal relationship is only with the student and their compliance with the rules set forth in this and related documents and does not include any obligations to the company in question unless expressly agreed upon in a separate legal document.

For information about **copyright permission, IBC, IRB & human subjects research, and animal research requirements**, view the Research Policies and Procedures section.

Plans A, B and C

SJSU offers three plans for candidates for master's degrees.

Plan A - Thesis Plan

This plan requires approval by the candidate's program coordinator and other members of the thesis committee. Plan A requires registration in departmental 299, Master's Thesis, for at least one unit. Departmental 298 units or other department-specific thesis research or methodology courses are often also taken during the data-gathering stages of the thesis research. While the total number of 298 and 299 units, as well as units in any other project or thesis-research or preparatory course, is restricted to six units for degree credit (and therefore inclusion on the candidacy form) by departmental rules and university policy, the total number of these units taken is not restricted.

Plan B - Degree-Without-Thesis Plan

Plan B is characterized by substitution of the thesis and departmental 299 units with another set of courses and either a project or comprehensive exam. The plan is expected to provide substantial practical experiences by means of the tools and techniques of advanced study in the field. The purpose of Plan B is most often to provide breadth, rather than specialization, and so is tailored by the selection of courses and the nature of the final, comprehensive exam. The exam may be oral, written, or both and constitutes the culminating experience in the plan. Many departments historically have assigned students to Plan B for projects, whether they are also accompanied by a comprehensive exam or not. The projects are usually conducted as part of a departmental 298 or otherwise numbered 200-level project course for a maximum of six units, as stipulated by the department, and the write-up for the project is required as part of the culminating experience. Departmental 299 units are not permitted for graduate credit under this plan.

Plan C - Special Plans Including Creative Projects

This plan is reserved for exceptional cases for which needs will be served best through a special arrangement of courses and/or special creative assignments. The assignments might include original paintings, dramatic presentations, motion picture productions, works of sculpture, electronic media or videotapes. In these cases, the candidate is required to submit a written report on the creative project in the form of a supplementary guide or handbook that puts the work into historical, cultural and/or professional context. This written report is to be cataloged in the university's institutional repository in the University Library in the same manner as regular theses discussed under Plan A. Departmental program coordinators will provide further information on special requirements of the plan. Plan C requires registration in a minimum of one unit of departmental 299. Note that creative projects can also be conducted under the Plan B umbrella without the submission of a thesis or taking departmental 299 units.

Thesis/Creative Project Unit Conditions

Registration for departmental 299 thesis courses occurs only after advancement to candidacy for the master's degree. By that point, the thesis committee should be fully established in accordance with the SJSU University policy. Before collection of data from human subjects, prior approval must be granted by the Institutional Review Board; see the section on Human Subjects Data Collection. Similarly, prior approval for research on or employing animals must be granted by the Institutional Animal Care and Use Committee; see the section on Animal Research Guidelines. Finally, prior approval for research utilizing hazardous biological agents, recombinant or synthetic nucleic acid molecules, materials derived from humans and nonhuman primates, toxins, or select agents must be granted by the Institutional Biosafety Committee; see the guidelines on recombinant DNA and hazardous biological agents.

A student is allowed a maximum of six semester units of thesis research and writing courses (departmental 299 and usually 298 but other thesis courses apply) for graduate credit in Plan A and Plan C, although more of these units can be attempted. The student may register for any or all of the required thesis units in one semester, but the sequence should follow departmental guidelines and regulations. All 299 units will receive a grade of "RP" until a final grade ("CR" or "NC") is awarded when the thesis is approved by Graduate Studies. "RP" units cannot be changed to "CR" until that time. Extensions of the two-year period for completing thesis work under the "RP" designation should be made before the period expires by means of the Incomplete Extension Petition available at available on the GAPE forms webpage. Upon satisfactory completion of the thesis, a "CR" is submitted by the thesis chair via the Change-of-Grade form to the Registrar to clear the "RP." A separate form must be submitted for each occurrence of "RP" (each semester the grade is displayed) on the record.

Thesis Approval and Publication

1. A student should determine the date they wish to defend and submit their thesis for publication based on their planned date of graduation. Submission deadlines for Fall, Spring, and Summer can be found on the College of Graduate Studies (CGS) Thesis and Dissertation Due Date website, and are updated each semester.
2. A student must select a style guide, departmental guidelines, or journal format governing the formatting of their thesis, and should work with their committee to determine the guidelines best suited for their discipline.

3. A student must defend their thesis according to departmental rules governing thesis approval. Once a student has successfully defended their thesis, and made any changes required by the committee after its defense, a Thesis Committee Approval form must be signed by all members of the committee. The form may be electronically or wet-signed by each member.
4. In addition to their final thesis, a student must submit the following forms to the College of Graduate Studies through their thesis mailbox (thesis@sjsu.edu) as individual pdfs.
 1. Thesis/Dissertation Information form [pdf];
 2. Thesis/Dissertation Committee Approval form [pdf];
 3. Thesis/Dissertation SJSU License Agreement form [pdf];
 4. IRB Approval, IACUC Approval, or Biological Use Authorization, if required by the nature of the student's research;
 5. Copyright permissions.
5. Students must follow the most current style guide (e.g., APA, ACS, Chicago, MLA) or use a departmental guideline (that includes heading and subheading styles, citations, and reference styles), as well as the SJSU 14 Formatting Rules. These rules include margin requirements, margin indents, spacing, and other required rules for the formatting of the thesis.

The College of Graduate Studies (CGS) will forward the student's thesis and Thesis Information Form to Montezuma Publishing, SJSU's non-profit publication partner, upon CGS' receipt. Montezuma Publishing will send the student an acknowledgement of their receipt of the thesis and Thesis Information form. They will review the thesis based on the chosen style guide (or departmental guidelines or journal format) and the SJSU 14 Formatting Rules. Once the student has been contacted by Montezuma Publishing, the student will work directly with them regarding corrections to the work and re-submissions.

6. When the thesis has been approved for publication and all publication fees have been paid, the College of Graduate Studies will forward the notice of approval to publish to your GAPE evaluator. If all other conditions have been met, the student's GAPE evaluator will award the student's degree for the semester of its submission, unless the student has been notified to the contrary (thesis approval for publication occurred after the publication date).

Graduation

Graduation Requirements

After being advanced to candidacy for the master's degree, the student is then required to:

- Maintain a minimum grade point average of 3.0 ("B") in completing requirements in the graduate degree program. The program is defined as completed courses included in the original graduate degree program plus all additions or substitutions.
- Complete all courses in the graduate degree program with grades between "A" and "C," or "CR." Grades of "C-" or lower, including "NC," "U," "IC" and "WU," are considered to be unsatisfactory. Should courses in the graduate degree program be completed with unsatisfactory grades, these grades must remain in the program and will continue to be computed in the grade point average of the program whether they are repeated or not.
- Complete all requirements for the degree as listed in the degree template in the university catalog. Substitutions for core and other required courses in the template must be justified and approved by the graduate program coordinator and department chair by submitting a Request for Course Substitution Petition.
- Complete an acceptable thesis, project or comprehensive examination. The thesis (Plan A) or creative project (Plan C) requires that one copy be submitted to the Associate Dean for Graduate Studies. In Plan B, completed projects are submitted to the student's major department and a final comprehensive oral and/or written examination over the field of concentration for the degree must usually be successfully completed.

Failure on initial attempts at these exams results in administrative-academic probation. Failure of the final attempt results in administrative-academic disqualification from the degree program. The program evaluator at GAPE is notified of passage of the exam by means of the graduate program coordinator's completion of the Verification of Culminating Experience memo or in some cases, verification through a message to the GAPE evaluator. Most program departments are required to certify when Plan A, B or C has been completed satisfactorily via the Verification of Culminating Experience form.

- Complete all work on the graduate degree program within seven years preceding award of the degree. If courses become outdated, the candidate should consult the section titled Time Limits on Courses in Graduate Degree Programs concerning steps to be followed.
- Apply for award of the master's degree by the posted deadline dates through your MySJSU account two weeks after achieving advancement to candidacy.
- Note that failure to clear incomplete ("I"), report-in-progress ("RP"), or report-delayed ("RD") grades will prevent graduation. An "I" obtained in a graded class results in an automatic grade change to an "IC" grade after one academic year has elapsed and conditions to remove the "I" are not met. The "IC" grade calculates to an "F" grade on the transcript, even after separation or graduation. In an ungraded ("CR/NC") course, the "I" reverts to a no credit ("NC") grade and is, therefore, also unsatisfactory for graduation if in a course on the candidacy form.
- Be in good academic standing (cumulative 3.0 minimum GPA in Graduate Division) at San José State University to receive a degree from this university.

Applying for the Master's Degree

The Petition for Advancement to Graduate Candidacy must be approved by the GAPE office before applying for graduation. Students should apply for graduation at least one semester before the date of anticipated graduation. However, it is highly advised that students apply at least one year before their future graduation date.

Advancement to candidacy is permitted only when all conditions of admission, if applicable, are met, nine letter-graded units, all with grades of C or better and a GPA of 3.0 or better have been achieved, and the graduate GVAR has been completed. For detailed information about these requirements, please visit the GAPE website or the above section on Advancement to Candidacy.

IMPORTANT: Eligible students can apply for graduation through self-service within their MySJSU account approximately two weeks after students have been approved for advancement to candidacy by the GAPE office. Students will be sent a MySJSU message including instructions and prompting them to apply for graduation. Only students who apply for graduation will be considered for graduation review.

Please note the following:

- All courses and requirements must be completed by the date of graduation.
- Any Incomplete (I), Report Delayed (RD), or Report Pending (RP) grades must be cleared before the degree can be awarded.
- Once the degree has been posted, no grade changes can be made to the record unless the Associate Dean for the College of Graduate Studies petitions the Registrar's Office on the student's behalf and only in rare cases.
- If a student is unable to complete the course work stipulated on the candidacy form or if the date of graduation is delayed, an online Graduation Date Change Request must be requested through the GAPE forms webpage (see Graduation Date Change Request)
- Required forms must be submitted by the deadlines posted on the GAPE website at deadlines webpage.
- Students are urged not to delay; failure to submit forms by the deadlines posted could delay graduation.

Master's Degree - Second

or Sequential and Simultaneous Master's Degree

There are two options for acquiring a second master's degree. Graduate students who have completed one master's degree program at San José State University may, with the approval of the new department, complete requirements for a second master's degree at this institution.

In the first option, the student interested in a sequential second graduate degree after finishing another master's degree must apply for admission to the second graduate degree program after the first degree is completed and recorded on the permanent record. All policies and procedures listed in this catalog applicable to satisfactory completion of a master's degree apply to completion of requirements for a second master's degree, including that program requirements must be completed within a seven-year period. Graduate Studies at SJSU will not admit an applicant in pursuit of a master's degree if it is determined that the applicant has a similar degree already. Pursuit of a second master's degree will receive a lower priority for admission.

The second option is pursuit of two simultaneous master's degrees. A student in good standing enrolled in one master's program may pursue a second master's degree. Matriculated master's students do not need to formally reapply to the university through Cal State Apply. However, the student must secure approval from and admission into the second master's degree program. This requires submission of all application materials previously requested of applicants by the department or school to the first degree program, as well as any additional materials required by the second program. Current transcripts, GRE scores, English-language test scores and letters of recommendation might be among those items required by the second department or school. The student is responsible for making those items available to the department regardless of the student's date of matriculation into the first major. Individual department deadlines apply for acceptance in any particular semester. Note: Approval for admission into the second master's program is given by means of its program coordinator's signature on the Master's Level Double Degree Application; contact the GAPE office for more information on this process.

The stipulation, however, is that a student pursuing simultaneous master's degrees cannot apply for graduation or be awarded either degree until both degree programs are complete. Both degrees must effectively be completed at the same time, and diplomas are issued for both degrees. If a student gains admission into a second degree program while still pursuing the first degree and applies for graduation before finishing the second program, the student will be awarded the first master's degree and then lose matriculated status. Student status will thus be revoked and pursuit of a second master's degree prohibited. To satisfy this procedural requirement, a student should simply delay the request for award of the first degree until the second degree program requirements have been fulfilled. Please keep in mind that graduate units expire after seven years.

Please note that both simultaneous degree programs must be completed in the same semester to qualify for the double degree award. Both programs must also be completed within seven years. The student who finds he or she cannot complete both degree programs in the same semester has the option of dropping one of the programs and receiving a single degree. Dropping one of the programs requires informing GAPE in writing.

Alternatively, if a second master's degree is desired but will not be completed at the same time as the first, the student must file for graduation from the first degree program and formally apply for admission into the second program. That would require a full application, submission of all documentation required by the university and the department of the second master's program, and acceptance by both entities. Pursuit of a second master's degree will receive a lower priority for admission.

Per University Policy F77-1, an approved program for a second master's degree should be prepared by the student and graduate program coordinator in the new field. If the new program happens to include coursework taken in the first degree, a maximum of 33% of the total units required for the new degree may be courses completed in the previous degree at this institution. For example, a student might be permitted to apply up to 10 units toward a 30-unit program. Such courses must have been completed by the student with a grade of "A," "B" or, in special cases, "CR." The courses must be approved by the graduate program coordinator who may limit the number of transferred units. The 33% level is allowed only for transfer of units from master's degree programs taken at SJSU. Transfer from completed degree programs at other institutions is not allowed.

Interdisciplinary Studies Master's Program

See the College of Graduate Studies.

Doctoral Requirements

- General Graduate Policies & Procedures
- Advancement to Candidacy
- Examinations
- Doctoral Project and Capstone Requirements
- Doctoral Dissertation Requirements
- Graduation

Advancement to Candidacy

Students should seek advancement to candidacy as soon as possible for their given program and on the advice of their graduate program coordinator. Graduate students may submit a Petition for Advancement to Graduate Candidacy form after satisfying the following:

- completed a minimum of one year of study
- achieved classified status
- completed a minimum of nine letter-graded units with all grades "C" or higher
- fulfilled the GWAR requirement
- achieved a minimum cumulative and program 3.0 GPA, and,
- graduate within the five-year time limit for degree completion.

Doctoral students must submit their petition no later than one semester prior to graduating.

University Policy S19-3 requires that the Graduation Writing Assessment Requirement (GWAR) be fulfilled before advancement to candidacy. However, for special cases, the candidacy form may be filed during the semester in which a GWAR-satisfying course is taken.

Title 5 (CCR 40510-40519.3) and CSU policy require a minimum 3.0 grade point average for all courses to satisfy doctoral degree program requirements. Should courses in the doctoral degree program be completed with unsatisfactory grades, these grades must remain in the program and will continue to be computed in the grade point average of the program. Therefore, the candidacy form will record each program course repeated and the grade earned. Course grades will be effectively averaged in the GPA calculation for advancement to candidacy and graduation. Please review University Policy F08-2 for more details.

Finally, students should be aware as to which catalog year they wish to declare and use to fulfill their graduation requirements. As program requirements may change slightly over a student's course of study, catalog rights should also be discussed with a program coordinator as needed.

Graduate Degree Program

As indicated above, the Petition for Advancement to Graduate Candidacy ("candidacy form") is submitted to GAPE when the student is qualified to advance to candidacy. This form lists all courses and culminating experiences that must be fulfilled for degree award. Students are advised to work closely with their program coordinator and GAPE evaluator prior to advancing to candidacy to ensure that the candidacy form is filled out accurately and in a timely manner.

There is no restriction in the number of units for project or dissertation research attempted but not included on the candidacy form. However, students completing a dissertation must include at least one unit of a 599 course on the form if their culminating experience requires a dissertation. The total number of units must be commensurate with program requirements. Students may not receive credit for project or dissertation units unless successfully completed; instead, either an RP or NC grade will be assigned in the semester of enrollment. For courses in RP

status, students may enroll in 1290R courses to maintain continuous enrollment until completion of their culminating experience. Students earning a NC must enroll in the course again and earn a CR to fulfill their culminating experience.

The original copy of the completed, signed Petition for Advancement to Graduate Candidacy should be submitted to the GAPE office by the deadlines. The student will be informed by the approval or denial of the petition through the student's MySJSU account under "Other Indicators".

Program Coursework

Once approved, the candidacy form is an official contract between the student and university. Course substitutions (either a core or an elective course) can be made by submitting the appropriate course substitution form to GAPE. A course may not be dropped from the graduate degree program, once a course has been completed.

Examinations

Doctor of Audiology - AuD

California State University policy requires a qualifying examination and an oral defense of the culminating doctoral project in Doctor of Audiology (AuD) programs. Departmental requirements for these examinations vary. In all cases, it is the candidate's responsibility to register through the departmental graduate coordinator to take all required examinations and the dissertation oral defense. The candidate's program coordinator and/or the departmental graduate coordinator will be able to provide general information concerning the nature of the examinations and recommended preparation for them.

The AuD diploma cannot be transmitted to the candidate until the major department certifies to the program evaluator at GAPE via the Verification of Culminating Experience form that the oral defense of the Doctoral Project has been completed satisfactorily. The student shall have completed all requirements for the degree within five years of achieving classified standing in the doctoral program. The appropriate campus authority may extend the time for completion of the requirements.

More details on the Doctor of Audiology Degree and its requirements may be found in the California Code of Regulations Title 5 §40517 and §40518.

Doctor of Education Degree - EdD

It is California State University policy to require a qualifying examination and an oral defense of the dissertation in Doctor of Education Degree (EdD) programs. Departmental requirements for these examinations vary. In all cases, it is the candidate's responsibility to register through the departmental graduate coordinator to take all required examinations and the dissertation oral defense. The candidate's program coordinator and/or the departmental graduate coordinator will be able to provide general information concerning the nature of the examinations and recommended preparation for them.

The EdD diploma cannot be transmitted to the candidate until the major department certifies to the program evaluator at GAPE via the Verification of Culminating Experience form that the oral defense has been completed satisfactorily. The student shall have completed all requirements for the degree within five years of achieving classified standing in the doctoral program. The appropriate campus authority may extend the time for completion of the requirements.

More details on the Doctor of Education Degree and its requirements may be found in the California Code of Regulations Title 5 §40511 and §40512.

Doctor of Nursing Practice (DNP)

California State University policy requires a doctoral qualifying examination or assessment and an oral presentation of the doctoral project in Doctor of Nursing Practice (DNP) programs. Departmental requirements for these examinations vary. In all cases, it is the candidate's responsibility to register through the departmental coordinator of graduate studies to take all required examinations or undergo assessments and to give the oral presentation of the doctoral project. The candidate's program coordinator and/or the departmental graduate coordinator will be able to supply general information concerning the nature of the examination or assessment and the oral presentation and recommended preparation for them.

The DNP diploma cannot be transmitted to the candidate until the major department certifies to the program evaluator at GAPE via the Verification of Culminating Experience form that the oral defense has been completed satisfactorily. The student shall have completed all requirements for the degree within five years of matriculation into the doctoral program.

More details on the Doctor of Nursing Practice Degree and its requirements may be found in the California Code of Regulations Title 5 §40513 and §40514.

Occupational Therapy Doctorate (OTD)

California State University policy requires a doctoral qualifying examination or assessment and an oral presentation of the doctoral capstone in Occupational Therapy Doctorate (OTD) programs. Departmental requirements for these examinations vary. In all cases, it is the candidate's responsibility to register through the departmental coordinator of graduate studies to take all required examinations or undergo assessments and to give the oral presentation of the doctoral capstone. The candidate's program coordinator and/or the departmental graduate coordinator will be able to supply general information concerning the nature of the examination or assessment and the oral presentation and recommended preparation for them.

The OTD diploma cannot be transmitted to the candidate until the major department certifies to the program evaluator at GAPE via the Verification of Culminating Experience form that the oral defense has been completed satisfactorily. The student shall have completed all requirements for the degree within five years of matriculation into the doctoral program.

More details on the Occupational Therapy Doctorate Degree and its requirements may be found in the California Code of Regulations Title 5 §40519 and §40519.1.

Doctoral Project and Capstone Requirements

Doctoral Project Requirements - Doctor of Audiology Degree

California State University policy requires a doctoral project in Doctor of Audiology (AuD) programs. A doctoral project proposal must be approved by program faculty. Approved proposals may be undertaken as projects that are developed under the guidance of faculty and approved by the doctoral project committee.

Project options may include, but are not limited to, one or more of the following:

1. Evidence-Based Project

Evidence-based projects shall demonstrate a thorough synthesis of evidence related to a defined clinical question pertinent to the profession of audiology.

Students shall produce a critical analysis of the literature, addressing the strength of evidence, synthesizing the findings of individual studies, interpreting the results, and applying the evidence to audiology practice.

Both the written document and oral presentation will be reviewed according to a set of defined criteria specified in the AuD student handbook.

2. Hearing Science Project

Projects shall demonstrate a thorough synthesis of evidence. Students shall produce a critical analysis of the literature, addressing the strength of evidence, synthesizing the findings of individual studies and interpreting the results. Both the written document and oral presentation will be reviewed according to a set of defined criteria specified in the AuD student handbook.

3. Clinical Research Project

CSU AuD programs may use a clinical research project significant to the field of audiology. The project may be in the form of a meta-analysis, systematic review, clinical research project, or single-case research design project. Both the written document and oral presentation shall be reviewed according to a set of defined criteria specified in the AuD student handbook.

Doctoral Project Requirements - Doctor of Nursing Practice Degree

California State University policy requires a doctoral project in Doctor of Nursing Practice (DNP) programs. Per that policy, the DNP doctoral project shall be the written product of a systematic, rigorous, evidence-based endeavor focused on a significant nursing practice issue. The doctoral project is expected to contribute to an improvement in professional practices, policy, or patient outcomes. It shall evidence originality, critical and independent thinking, appropriate form and organization, and adequate rationale. The DNP doctoral project shall reflect a command of the scholarly literature and shall demonstrate the student's mastery of evidence-based practice at the doctoral level. The written component of the doctoral project shall be organized in an appropriate form and shall identify the problem statement and purpose, state the major theoretical perspectives, explain the significance of the undertaking, relate it to the relevant scholarly and professional literature, identify the methods of gathering and analyzing the data, and offer a conclusion or recommendation.

Doctoral Capstone Requirements - Occupational Therapy Doctorate Degree

California State University policy requires a doctoral capstone in Occupational Therapy Doctorate (OTD) programs. Per that policy, the OTD doctoral capstone shall demonstrate the student's doctoral-level mastery of research skills, occupational science and/or current evidence-based practice. It shall demonstrate critical and independent thinking and a command of the research literature. The written component of the doctoral capstone shall demonstrate originality, evidencing critical and independent thinking. It shall be organized in an appropriate form and shall identify the research problem and question(s), state the major theoretical perspectives, explain the significance of the undertaking, relate it to the relevant scholarly and professional literature, identify the methods of gathering and analyzing the data, analyze and interpret data and offer a conclusion or recommendation.

Doctoral Dissertation Requirements

Doctoral Dissertation Requirements - Doctor of Education Degree

California State University policy requires a dissertation in Doctor of Education Degree (EdD) programs. Per that policy, the EdD dissertation shall be the written product of systematic, rigorous research on a significant professional issue. It is expected to contribute to an improvement in professional practices or policy. It shall evidence originality, critical and independent thinking, appropriate form and organization, and a rationale. The EdD dissertation shall also identify the research problem and question(s), state the major theoretical perspectives, explain the significance of the undertaking, relate it to the relevant scholarly and professional literature, set forth the appropriate sources for and

methods of gathering and analyzing the data, and offer a conclusion or recommendation. It shall include a written abstract that summarizes the significance of the work, objectives, methodology, and a conclusion or recommendation.

Process for Doctoral Dissertations

All instructions for doctoral dissertation formatting and submission to Graduate Studies are located in the SJSU Thesis and Dissertation Guidelines.

These instructions provide general guidance for authors of doctoral dissertations at SJSU. Examples of front pages are provided in the guidelines. Students should read the guidelines carefully and consult their program coordinators concerning the format of the thesis or dissertation, the professional style guide to use, and journal articles to emulate, if applicable. The major department sometimes provides students with more complete formatting instructions.

SJSU participates in the ProQuest information service for archiving theses and dissertations. Students completing theses and dissertations are required to email their committee-approved manuscript and accompanying documents to Graduate Studies according to the instructions provided in the SJSU Thesis and Dissertation Guidelines.

Checking the Dissertation Manuscript

The College of Graduate Studies does not serve as an editor nor content reviewer. The student and graduate committee members should carefully proofread the dissertation before it is submitted and are responsible for its content and ensuring that it is correctly formatted. A careful review should be used by the student as a guide to correcting similar errors in the entire manuscript.

Neither SJSU nor any of its separate offices or departments is responsible for matters concerning a student's relationships or agreements with any outside agency or individual consulted for manuscript preparation. Neither the university nor any of its offices will take part in disagreements between students and typists, editors or copy shops with regard to dissertation preparation services, expected costs or billed costs. A student conducting dissertation research off site, for example at a local company, must be free to include all of it in the dissertation. SJSU's legal relationship is only with the student and their compliance with the rules set forth in this and related documents and does not include any obligations to the company in question unless expressly agreed upon in a separate legal document.

For information about **copyright permission, IRB & human subjects research, IBC, and animal research requirements**, view the Research Policies and Procedures section.

Dissertation Approval and Publication

1. A student should determine the date they wish to defend and submit their dissertation for publication based on their planned date of graduation. Submission deadlines for Fall, Spring, and Summer can be found on the College of Graduate Studies (CGS) Thesis and Dissertation Due Date website, and are updated each semester.
2. A student must select a style guide, departmental guidelines, or journal format governing the formatting of their dissertation and should work with their committee to determine the guidelines best suited for their discipline.
3. A student must defend their dissertation according to departmental rules governing dissertation approval. Once a student has successfully defended their dissertation, and made any changes required by the committee after its defense, a Dissertation Committee Approval form must be signed by all members of the committee. The form may be electronically or wet-signed by each member.
4. In addition to their final thesis, a student must submit the following forms to the College of Graduate Studies through their thesis mailbox (thesis@sjsu.edu) as individual pdfs.

- a. Thesis/Dissertation Information form [pdf];
 - b. Thesis/Dissertation Committee Approval form [pdf];
 - c. Thesis/Dissertation SJSU License Agreement form [pdf];
 - d. IRB Approval, IACUC Approval, or Biological Use Authorization, if required by the nature of the student's research;
 - e. Copyright permissions.
5. Students must follow the most current style guide (e.g., APA, ACS, Chicago, MLA) or use a departmental guideline (that includes heading and subheading styles, citations, and reference styles), as well as the SJSU 14 Formatting Rules. These rules include margin requirements, margin indents, spacing, and other required rules for the formatting of the dissertation.

The College of Graduate Studies (CGS) will forward the dissertation and Dissertation Information Form to Montezuma Publishing, SJSU's non-profit publication partner, upon CGS' receipt. Montezuma Publishing will send the student an acknowledgement of their receipt of the dissertation and the Dissertation Information form. They will review the dissertation based on the chosen style guide (or departmental guidelines or journal format) and the SJSU 14 Formatting Rules. Once the student has been contacted by Montezuma Publishing, the student will work directly with them regarding corrections to the work and re-submissions.

6. When your dissertation has been approved for publication and all publication fees have been paid, the College of Graduate Studies will forward the notice of approval to publish to the student's GAPE evaluator. If all other conditions have been met, the student's GAPE evaluator will award the student's degree for the semester of its submission, unless the student has been notified to the contrary (dissertation approval for publication occurred after the publication date).

Graduation

Graduation Requirements

After being advanced to candidacy for the doctorate degree, the student is then required to

- Maintain a minimum grade point average of 3.0 ("B") in completing requirements in the graduate degree program. The program is defined as completed courses included in the original graduate degree program plus all additions or substitutions.
- Complete all courses in the graduate degree program with grades between "A" and "C," or "CR." Grades of "C-" or lower, including "NC," "U," "IC" and "WU," are considered to be unsatisfactory. Should courses in the graduate degree program be completed with unsatisfactory grades, these grades must remain in the program and will continue to be computed in the grade point average of the program whether they are repeated or not.
- Complete all requirements for the degree as listed in the degree template in the university catalog. Substitutions for core and other required courses in the template must be justified and approved by the graduate program coordinator and department chair by submitting a Request for Course Substitution Petition.
- Complete an acceptable dissertation or project. The dissertation requires that one copy be submitted to the Associate Dean for College of Graduate Studies. Completed projects are submitted to the student's major department and a final comprehensive oral and/ or written examination over the field of concentration for the degree must usually be successfully completed. Failure on initial attempts at these exams results in administrative-academic probation. Failure of the final attempt results in administrative-academic disqualification from the degree program. The program evaluator at GAPE is notified of passage of the exam by means of the graduate program coordinator's completion of the Verification of Culminating Experience memo. Additionally, the program department must certify to the program evaluator at GAPE via the Verification of Culminating Experience form that the oral defense has been completed satisfactorily.

- Complete all work on the graduate degree program within five years preceding award of the degree. If courses become outdated, the candidate should consult the section titled Time Limits on Courses in Graduate Degree Programs concerning steps to be followed.
- Apply for the award of degree by the posted deadline dates through your MySJSU account two weeks after achieving advancement to candidacy.
- Note that failure to clear incomplete ("I"), report-in-progress ("RP"), or report-delayed ("RD") grades will prevent graduation. An "I" obtained in a graded class results in an automatic grade change to an "IC" grade following one academic year, which calculates to an "F" grade on the transcript, even after separation or graduation. In an ungraded ("CR/NC") course, the "I" reverts to a no credit ("NC") grade and is, therefore, also unsatisfactory for graduation if in a course on the candidacy form.
- Be in good academic standing (cumulative 3.0 minimum GPA in Graduate Division) at San José State University to receive a degree from this university.

Applying for the Doctoral Degree

The Petition for Advancement to Graduate Candidacy Form must be approved by the GAPE office before applying for graduation (see "Advancement to Candidacy"). Students should apply for graduation at least one semester before the date of anticipated graduation before filing for candidacy. However, it is highly advised that students apply at least one year before their future graduation date.

For detailed information about these requirements, please visit the GAPE Graduation website and the catalog section Doctoral Requirements - Advancement to Candidacy.

IMPORTANT: Eligible students can apply for graduation through self-service within their MySJSU account approximately two weeks after students have been approved for advancement to candidacy by the GAPE office. Students will be sent a MySJSU message including instructions and prompting them to apply for graduation. Only students that apply for graduation will be considered for graduation review.

Please note the following:

- All courses and requirements must be completed by the date of graduation.
- Any Incomplete (I), Report Delayed (RD), or Report Pending (RP) grades must be cleared before the degree can be awarded.
- Once the degree has been posted, no grade changes can be made to the record unless the Associate Dean for the College of Graduate Studies petitions the Registrar's Office in rare circumstances.
- If a student is unable to complete the coursework stipulated on the candidacy form or if the date of graduation is delayed, a Graduation Date Change Request for Award of Graduate Degree must be requested through the GAPE forms webpage (see Graduation Date Change Request)
- Required forms must be submitted by the deadlines posted on the GAPE website.
- Students are urged not to delay; failure to submit forms by the deadlines posted could delay graduation.

Civil and Criminal Penalties for Violation of Federal Copyright Laws

Anyone who is found to be liable for copyright infringement may be liable for either the owner's actual damages along with any profits of the infringer or statutory damages of up to \$30,000 per work infringed. In the case of a willful infringement, a court may award up to \$150,000 per work infringed. (See 17 U.S.C. §504.) Courts also have discretion to award costs and attorneys' fees to the prevailing party. (See 17 U.S.C. §505.) Under certain circumstances, willful copyright infringement may also result in criminal penalties, including imprisonment and fines. (See 17 U.S.C. §506 and 18 U.S.C. §2319.)

Health Policies

Federal Law requires the university to provide a description of health risks associated with alcohol and drug abuse.

Drug and Alcohol Abuse Prevention Program (DAAPP)

The DAAPP is a specific set of comprehensive statements adopted by the university intended to prevent the unlawful possession, use and distribution of illicit drugs and alcohol abuse involving students and employees on campus and at institutionally-recognized events and activities. The current university DAAPP is available for viewing on the Drug-Free Schools and Communities Act webpage. A paper copy of the DAAPP is available upon request by contacting the Office of the Clery Director by phone at 408-924-1501 or by email at clerycompliance@sjsu.edu.

California Alcohol and Drug Abuse Law

The Alcoholic Beverage Control Act was enacted in 1953. This Act is intended to protect the safety, welfare, health, peace and morals of Californians, eliminate the unlicensed and unlawful manufacture, sale and disposal of alcoholic beverages and promote temperance in the consumption and use of alcoholic beverages. (Bus and Prof. Code 23001)

A person convicted of a violation of the Alcohol and Beverage Control Act is guilty of a misdemeanor or felony depending on the violation.

The Uniform Controlled Substances Act may be found in the Health and Safety Code, Section 11000-11651. This Act is the result of a growing concern over substances. Controlled Substances are divided into five Schedules and the substances under each Schedule may be found in Sections 11053-11058.

Local Laws

Local laws generally are consistent with Federal and State laws.

University Regulations

Use and Abuse of Alcohol and Other Drugs- University Policy F10-1

This policy delineates University policy concerning alcohol and illegal drugs or substances, provides procedural guidelines, and communicates the consequences of failing to adhere to established policies. Provision for the purchase, sale, service, and consumption of alcoholic beverages on campus is a privilege accorded to University members with the understanding that they will comply with internal rules, regulations, and relevant legislation (local, state or national). All members of the University community as well as their guests have a responsibility to ensure that alcohol is used in a responsible manner by persons twenty-one (21) years of age or older. The use of alcohol and other drugs should not interfere with the primary mission of the University as an educational institution.

University regulations controlling student behavior may be found in the Student Conduct Code (Title 5 of the California Code of Regulations Section 41301). The Campus Alcohol Policy includes procedures for serving alcoholic beverages on campus.

The University is required to post in designated areas information concerning the use of anabolic steroids.

Conduct Regarding Drugs and Alcohol

SJSU students, faculty and staff are expected to comply with Federal, State and Local laws governing the use of alcohol and illicit drugs on the University campus and as part of university activities both on and off the campus. These laws control the possession, use and distribution of alcohol and unlawful drugs.

All incoming students are expected required to complete online training on sexual assault and alcohol abuse prevention. Incoming students will receive MySJSU notifications on training dates and course instructions when they are available.

The sale, possession, distribution or use of illicit drugs will not be tolerated. Students, faculty and staff are expected to comply with laws governing the possession, distribution and consumption of alcohol as promulgated by the State of California and the university.

It is the responsibility of every student, faculty member and employee to report incidents involving infractions of federal, state and local drug and alcohol laws on campus or at officially sponsored Off-Campus Activities to University Personnel or the Vice President for Student Affairs.

As is the case in courts, lack of awareness and/or failure to comprehend the regulations are not acceptable defense of one's actions.

Available Drug or Alcohol Counseling and Treatment Programs

SJSU students are encouraged to seek assistance for drug and alcohol problems at the Student Wellness Center. The State also maintains an Employee Assistance Program to help employees and their dependents with problems of alcohol and drugs.

State Employee Assistance Program

Concern 1-800-344-4222
www.concern-eap.com

Counseling & Psychological Services (CAPS)

Student Wellness Center, 3rd Floor
408-924-5678
www.sjsu.edu/wellness/

Student Health Services

Student Wellness Center 101
408-924-5678
www.sjsu.edu/wellness/

Federal Trafficking Penalties

Federal penalties for trafficking are dependent upon several conditions including the substance, amounts involved and whether the matter is a first or second offense.

Penalties involve monetary sanctions and/or prison terms up to and including life in prison.

Federal Penalties and Sanctions For Illegal Possession Of A Controlled Substance 21 U.S.C. 844(a) - 1st conviction: Up to 1 year imprisonment and fined at least \$1,000 but not more than \$100,000 or both.

After 1 prior drug conviction: At least 15 days in prison, not to exceed 2 years and fined at least \$2,500 but not more than \$250,000 or both.

After 2 or more prior drug convictions: At least 90 days in prison, not to exceed 3 years and fined at least \$5,000 but not more than \$250,000 or both.

Special sentencing provisions for possession of crack cocaine: Mandatory at least 5 years in prison, not to exceed 20 years and fined up to \$250,000 or both if:

- 1st crack conviction and the amount of crack possessed exceeds 5 grams.
- 2nd crack conviction and the amount of crack possessed exceeds 3 grams.
- 3rd or subsequent crack conviction and the amount of crack possessed exceeds 1 gram.

21 U.S.C. 853(a)(2) and 881(a)(7) - Forfeiture of personal and real property used to possess or to facilitate possession of a controlled substance if that offense is punishable by more than 1 year imprisonment.

21 U.S.C. 881 (a)(4) - Forfeiture of vehicles, boats, aircraft or any other conveyance used to transport or conceal a controlled substance.

21 U.S.C. 844a - Civil fine of up to \$10,000 (pending adoption of final regulations).

21 U.S.C. 853a - Denial of Federal benefits, such as student loans, grants, contracts and professional and commercial licenses, up to 1 year for first offense, up to 5 years for second and subsequent offenses.

18 U.S.C. 922(g) - Ineligible to receive or purchase a firearm.

Tobacco

As of August 2015, SJSU is a Smoke and Tobacco Free campus. For more information see Presidential Directive (PD2014-01) and CSU Executive Order 1108.

The Tobacco Free SJSU website provides more information.

For tobacco cessation services:

- Student Wellness Center - Wellness and Health Promotion
408-924-6202
www.sjsu.edu/treatyourselfwell/
- Low Cost Nicotine Replacement Therapies (NRT):
Patches and gum are available at Student Wellness Center Pharmacy
408-924-6115
- California Smoker's Helpline
1-800-662-8887 (1-800-NO-BUTTS)
- VA-San Jose Community Clinic
408-574-9100
www.va.gov/palo-alto-health-care/locations/san-jose-va-clinic/

Some of the rationale for a smoke free campus includes:

- Tobacco, both smoked and smokeless, is the leading cause of cancers of the cheeks, gums, palate, tongue and lips.
- A one-pack-a-day smoker increases their chances of cancer of the esophagus by as much as 500%.
- Cigarette smokers are ten times more likely to die of lung cancer than non-smokers.
- Cancer is not the only disease associated with smoking.
- Cigarette smokers are twice as likely to get peptic ulcers as are non-smokers.
- Nicotine is a powerful constrictor of blood vessels and small arteries and results in the restriction of oxygen flow to the heart and elsewhere.
- Heart attacks and strokes are results of oxygen restriction.
- Smoking more than 1/2 pack daily is also associated with higher incidence of infertility in women.
- Babies born to women who smoke are lighter and smaller than those born to non-smokers. This is important because birth weight is a predictor of infant health.

Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS)

HIV/AIDS is a viral disease which destroys the body's ability to fight specific illnesses.

The risks of HIV/AIDS can be reduced by:

- Avoiding the exchange of body fluids. HIV can be passed through the exchange of blood, semen, vaginal secretions and breast milk.
- Using condoms correctly and consistently to greatly reduce the exchange of body fluids.
- Reducing the number of sexual partners.
- Avoiding the use of intravenous drugs or sharing needles.
- Abstinence.
- Communicating with sexual partners before having sex about being tested for sexually transmitted infections and protection.

For more information about HIV/AIDS prevention, confidential testing, safer sex and free condoms, contact:

Student Wellness Center

408-924-5678

www.sjsu.edu/wellness/grow-your-wellbeing/

For anonymous HIV testing, please contact the following locations:

Santa Clara County Public Health (Crane Center)

976 Lenzen Ave., Suite 1800

San José, CA 95126

408-792-3720

Billy DeFrank LGBT Center

938 The Alameda

San José, CA 95126

408-293-3040

Asian Americans for Community Involvement (AACI)

2400 Moorpark Ave #300

San José, CA 95128

408-975-2730 ext 381

CSU Nondiscrimination Policy and Title IX

CSU Nondiscrimination Policy & Title IX

The California State University (CSU or University) is committed to maintaining an inclusive and equitable community that values diversity and fosters mutual respect. The CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) was created to codify that commitment. All Students and Employees have the right to participate fully in CSU programs, activities, and employment free from Discrimination and Harassment based on any Protected Status, which includes Sexual Harassment.

Please note that the Nondiscrimination Policy additionally covers Prohibited Consensual Relationships.

Both the Office of Equal Opportunity and the Title IX and Gender Equity Office use the Nondiscrimination Policy.

The Nondiscrimination Policy can be accessed in its entirety at: <https://calstate.policystat.com/policy/12891658/latest/>

Office of Equal Opportunity

The Office for Equal Opportunity (OEO) facilitates, investigates and resolves complaints of discrimination, harassment, and retaliation, provides training and consultation, and ensures adherence to compliance requirements.

The OEO addresses incidents of Discrimination, Harassment, and Retaliation on the basis of age (40 or older), disability (physical and mental), genetic information, medical condition, marital status, nationality, race or ethnicity (including color, caste, or ancestry), religion (including religious creed), and veteran or military status.

The OEO Office

UP North, Administration Building 242
1 Washington Sq. San Jose, CA 95192
Phone: 408-924-2450
Email: DHR@sjsu.edu

Julie Paisant, Senior Director, DHR Administrator
(408) 924-2250

Title IX and Gender Equity Office

The Title IX and Gender Equity Office (The Title IX Office) is committed to protecting all people, representing all gender identities, from discrimination based on sex and gender, harassment based on sex and gender, sexual harassment, sexual misconduct, sexual exploitation, dating and domestic violence, stalking, and retaliation. In furtherance of this commitment the Title IX Office strives to soften the impact of gender based discrimination and violence by providing students supportive measures so that they might continue on their academic journey as they navigate difficult circumstances. Please know that the university will not subject a student reporting an experience involving the personal use of drugs or alcohol to violations of the Student Conduct Code.

Title IX requires SJSU to designate a Title IX and Gender Equity Officer to monitor and oversee its overall Title IX compliance. The Title IX and Gender Equity Officer is available to explain and discuss the right to file a criminal complaint (for example, in cases of sexual misconduct); SJSU's complaint process, including the investigation process; how confidentiality is handled; available resources, both on and off campus; and other related matters.

The Title IX Office

Clark Hall, First Floor, Room 126
1 Washington Sq. San Jose, CA 95192
Phone: 408-924-7290 (8 AM - 5 PM)
Text: 669-877-0620 (All Hours)
Email: TitleIX@sjsu.edu

For more information on the Title IX Office, please visit us at <https://www.sjsu.edu/titleix/>

Nondiscrimination Policy and Complaint Procedures

Protected Status: Age, Genetic Information, Marital Status, Medical Condition, Nationality, Race or Ethnicity (including color, caste, or ancestry), Religion or Religious Creed, and Veteran or Military Status.

California State University does not discriminate on the basis of age, genetic information, marital status, medical condition, nationality, race or ethnicity (including color, caste and ancestry), religion (or religious creed), and veteran or military status - as these terms are defined in the CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) in its programs and activities, including admission and access. Federal and state laws, including Title VI of the Civil Rights Act of 1964 and the California Equity in Higher Education Act, prohibit such discrimination.

Julie Paisant, Senior Director, Employee Relations, Retention, and Equal Opportunity, has been designated to coordinate the efforts of San Jose State University to comply with all applicable federal and state laws prohibiting discrimination on these bases. Inquiries concerning compliance may be presented to this person at UP North, Administration Building 242, 1 Washington Sq. San Jose, CA 95192, Phone: 408-924-2450.

CSU Procedures for Complaints of Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against a Student, (or any successor policy) is the systemwide procedure for all complaints or discrimination, harassment or retaliation **made against** other CSU students. CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against an Employee or Third-Party (or any successor procedure) is the system wide procedure for all complaints of discrimination, harassment or retaliation made against the CSU, a CSU employee or a third party.

Protected Status: Disability

The California State University does not discriminate on the basis of disability (physical and mental) - as this term is defined in the CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) - in its programs and activities, including admission and access. Federal and state laws, including sections 504 and 508 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, prohibit such discrimination.

Julie Paisant, Senior Director, Employee Relations, Retention, and Equal Opportunity, has been designated to coordinate the efforts of San Jose State University to comply with all applicable federal and state laws prohibiting discrimination on the basis of disability. Inquiries concerning compliance may be presented to this person at UP North, Administration Building 242, 1 Washington Sq. San Jose, CA 95192, Phone: 408-924-2450.

CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against a Student (or any successor procedure) is the systemwide procedure for all complaints of discrimination, harassment or retaliation **made against**,

other CSU students. CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against an Employee or Third-Party (or any successor procedure) is the systemwide procedure for all complaints of discrimination, harassment or retaliation **made against the CSU, a CSU employee or a third party.**

Protected Status: Gender (or sex), Gender Identity (including nonbinary and transgender), Gender Expression and Sexual Orientation

California State University does not discriminate on the basis of gender (or sex), gender (including nonbinary and transgender), gender expression or sexual orientation - as these terms are defined in CSU policy - in its programs and activities, including admission and access. Federal and state laws, including Title IX of the Education Amendments of 1972, prohibit such discrimination.

Peter Lim, Interim Director Title IX and Gender Equity Officer, has been designated to coordinate the efforts of San Jose State University to comply with all applicable federal and state laws prohibiting discrimination on these bases. Inquiries concerning compliance may be presented to this person at Clark Hall, First Floor, Room 126, 1 Washington Sq. San Jose, CA 95192, Phone: 408-924-7290 (8 AM - 5 PM), Text: 669-877-0620 (All Hours).

The California State University is committed to providing equal opportunities to all CSU students in all university programs, including intercollegiate athletics. CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against a Student (or any successor) is the systemwide procedure for all complaints of discrimination, harassment or retaliation made against other CSU students. CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against an Employee or Third-Party (or any successor procedure) is the systemwide procedure for all complaints of discrimination, harassment or retaliation made against the CSU, a CSU employee or a third party).

As a matter of federal and state law and California State University policy, the following types of conduct are prohibited:

Sex Discrimination or Gender Discrimination is (an) adverse action taken against a complainant because of their protected status (sex or gender).

Adverse Action means an action engaged in by the respondent that has a substantial and material adverse effect on the complainant's ability to participate in a university program, activity, or employment. Minor or trivial actions or conduct not reasonably likely to do more than anger or upset a complainant does not constitute an adverse action.

Sexual Harassment means unwelcome verbal, nonverbal or physical conduct of a sexual nature that includes, but is not limited to, sexual advances, requests for sexual favors, offering employment benefits or giving preferential treatment in exchange for sexual favors, or indecent exposure, and any other conduct of a sexual nature where:

1. Submission to, or rejection of, the conduct is explicitly or implicitly used as the basis for any decision affecting a Complainant's academic status or progress, or access to benefits and services, honors, programs, or activities available at or through the university; or
2. Submission to, or rejection of, the conduct by the Complainant is explicitly or implicitly used as the basis for any decision affecting a term or condition of the Complainant's employment, or an employment decision; or
3. The conduct is sufficiently severe, persistent, or pervasive that its effect, whether or not intended, could be considered by a reasonable person in the shoes of the Complainant, and is in fact considered by the Complainant, as limiting their ability to participate in or benefit from the services, activities or opportunities offered by the university; or
4. The conduct is sufficiently severe, persistent, or pervasive that its effect, whether or not intended, could be considered by a reasonable person in the shoes of the Complainant, and is in fact considered by the Complainant, as creating an intimidating, hostile or offensive environment.

Sexual Harassment could include being forced to engage in unwanted sexual contact as a condition of membership in a student organization or in exchange for a raise or promotion; being subjected to video exploitation or a campaign of sexually explicit graffiti; or frequently being exposed to unwanted images of a sexual nature in a work environment, or in a classroom where the images are unrelated to the coursework.

Claiming that the conduct was not motivated by sexual desire is not a defense to a complaint of Sexual Harassment.

Sexual and/or romantic relationships between members of the university community may begin as consensual, and may develop into situations that lead to Discrimination, Harassment, Retaliation, Sexual Misconduct, Dating or Domestic Violence, or Stalking subject to this policy.

Sexual Misconduct

All sexual activity between members of the CSU community must be based on **Affirmative Consent**. Engaging in any sexual activity without first obtaining Affirmative Consent to the specific activity is Sexual Misconduct, whether or not the conduct violates any civil or criminal law.

a. Sexual activity includes, but is not limited to:

- Kissing
- touching intimate body parts
- fondling
- intercourse
- penetration, no matter how slight, of the vagina or anus with any part or object
- oral copulation of a sex organ by another person.

b. Sexual Misconduct includes, but is not limited to, the following conduct:

- an attempt, coupled with the ability, to commit a violent injury on the person of another because of that person's Gender or Sex,
- the intentional touching of another person's intimate body parts without Affirmative Consent,
- intentionally causing a person to touch the intimate body parts of another without Affirmative Consent,
- using a person's own intimate body part to intentionally touch another person's body without Affirmative Consent,
- any unwelcome physical sexual acts, such as unwelcome sexual touching,
- using physical force, violence, threat, or intimidation to engage in sexual activity,
- ignoring the objections of the other person to engage in sexual activity,
- causing the other person's incapacitation through the use of drugs or alcohol to engage in sexual activity,
- taking advantage of the other person's incapacitation to engage in sexual activity.

c. Intimate body part means the sexual organ, anus, groin, buttocks, or breasts of any person.

d. Sexual activity between a Minor (a person younger than 18 years old) and a person who is at least 18 and two years older than the Minor always constitutes Sexual Misconduct, even if there is Affirmative Consent to all sexual activity. The existence of Affirmative Consent and/or the type of sexual activity may be relevant to the determination of an appropriate Sanction.

e. Persons of all Genders, Gender Identities, Gender Expressions, and Sexual Orientations can be victims of these forms of Sexual Misconduct. Sexual Misconduct can be committed by an individual known to the victim including a person the Complainant may have just met, i.e., at a party, introduced through a friend, or on a social networking website.

Affirmative Consent

It is the University's expectation that every sexual encounter a member of our community engages in will happen with all parties' affirmative consent as defined in the Nondiscrimination Policy. At each point of a sexual encounter, the initiating person must receive a positive exchange of words or actions from those they are engaging with. Affirmative

consent may be withdrawn at any point, even if it was previously given. Affirmative consent cannot be given if the person giving it is incapacitated.

If affirmative consent cannot be given, or has not been given, then the sexual activity is non-consensual and a violation of the CSU Nondiscrimination policy.

Affirmative Consent must be voluntary, and given without coercion, force, threats, or intimidation.

It is the responsibility of each person involved in the sexual activity to ensure Affirmative Consent has been obtained from the other participant(s) prior to engaging in the sexual activity.

Affirmative Consent means an agreement to engage in sexual activity that is:

- Informed
- Affirmative
- Conscious
- Voluntary and
- Mutual
- Lack of protest or resistance does not mean there is Affirmative Consent.
- Silence does not mean there is Affirmative Consent.
- The existence of a dating or social relationship between those involved, or the fact of past sexual activities between them, should never by itself be assumed to be an indicator of Affirmative Consent.
- A request for someone to use a condom or birth control does not, in and of itself, mean there is Affirmative Consent.
- Affirmative Consent can be withdrawn or revoked. Consent must be ongoing throughout a sexual activity and can be revoked at any time, including after sexual activity begins. Once consent is withdrawn or revoked, the sexual activity must stop immediately. Consent to one form of sexual activity (or one sexual act) does not constitute consent to other forms of sexual activity. Consent given to sexual activity on one occasion does not constitute consent on another occasion.

Incapacitation

Affirmative Consent cannot be given by a person who is incapacitated. A person is unable to consent when asleep, unconscious, or incapacitated due to the influence of drugs, alcohol, or medication so that the person could not understand the fact, nature, or extent of the sexual activity. A person is incapacitated if the person lacks the physical and/or mental ability to make informed, rational decisions. A person with a medical or mental disability may also lack the capacity to give consent.

Whether an intoxicated person (as a result of using alcohol or other drugs) is incapacitated depends on the extent to which the alcohol or other drugs impact the person's decision-making ability, awareness of consequences, and ability to make informed judgments. A person's own intoxication or incapacitation from drugs or alcohol does not diminish that person's responsibility to obtain Affirmative Consent before engaging in sexual activity.

Sexual activity with a minor (a person under 18 years old) is not consensual, because a minor is considered incapable of giving consent due to age.

It shall not be a valid excuse that a person affirmatively consented to the sexual activity if the Respondent knew or reasonably should have known that the person was unable to consent to the sexual activity under any of the following circumstances:

- The person was asleep or unconscious;
- The person was incapacitated due to the influence of drugs, alcohol, or medication, so that the person could not understand the fact, nature, or extent of the sexual activity; or

- The person could not understand the fact, nature, or extent of the sexual activity, or was unable to communicate, due to a mental or physical condition.

It shall not be a valid excuse that the Respondent believed that the person consented to the sexual activity under either of the following circumstances:

- The Respondent's belief in Affirmative Consent arose from the intoxication or recklessness of the Respondent; or
- The Respondent did not take reasonable steps, in the circumstances known to the Respondent at the time, to ascertain whether the person affirmatively consented.

Dating Violence and Domestic Violence

Dating Violence means physical violence or threat of physical violence committed by a person:

- a. Who is or has been in a social relationship of a romantic or intimate nature with the Complainant; and
- b. Where the existence of such a relationship shall be determined based on a consideration of the following factors:
 - i. The length of the relationship.
 - ii. The type of relationship.
 - iii. The frequency of interaction between the persons involved in the relationship.

Domestic Violence means physical violence or threat of physical violence committed by a current or former spouse or intimate partner of the Complainant, by a person with whom the Complainant shares a child in common, by a person who is cohabitating with or has cohabitated with the Complainant as a spouse or intimate partner, or by a person similarly situated to a spouse of the Complainant.

Physical violence means physical conduct that intentionally or recklessly threatens the health and safety of the recipient of the behavior, including assault.

Stalking

Stalking means engaging in a Course of Conduct directed at a specific person that would cause a reasonable person to fear for the safety of self or others' safety or to suffer Substantial Emotional Distress. For purposes of this definition:

- **Course of Conduct** means two or more acts, including but not limited to, acts in which one party directly, indirectly, or through third parties, by any action, method, device, or means, follows, monitors, observes, surveils, threatens, or communicates to or about the other party, or interferes with the other party's property.
- **Substantial Emotional Distress** means significant mental suffering or anguish that may but does not necessarily require medical or other professional treatment or counseling.

Prohibited Consensual Relationships

A Prohibited Consensual Relationship is a consensual sexual or romantic relationship between an Employee and any Student or Employee over whom they exercise direct or otherwise significant academic, administrative, supervisory, evaluative, counseling, or extracurricular authority.

Retaliation

Retaliation means that a substantial motivating reason for an Adverse Action taken against a person was because the person has or is believed to have:

- a. Exercised their rights under this policy,
- b. Reported or opposed conduct which was reasonably and in good faith believed to be in violation of this policy,
- c. Assisted or participated in an investigation/proceeding under this policy, regardless of whether the Complaint was substantiated,
- d. Assisted someone in reporting or opposing a violation of this policy or assisted someone in reporting or opposing Retaliation under this policy.

Adverse Action means an action engaged in by the Respondent that has a substantial and material adverse effect on the Complainant's ability to participate in a university program, activity, or employment. Minor or trivial actions or conduct not reasonably likely to do more than anger or upset a Complainant does not constitute an Adverse Action.

Retaliation may occur whether or not there is a power or authority differential between the individuals involved.

Additional Prohibited Conduct Definitions

1. **Sexual Harassment** means conduct on the basis of Sex that satisfies one or more of the following:
 - a. An Employee conditioning the provision of an aid, benefit, or service of the University on an individual's participation in unwelcome sexual conduct;
 - b. Unwelcome conduct determined based on the reasonable person standard to be so severe, pervasive, and objectively offensive that it effectively denies a person equal access to an Education Program or Activity.
2. **Sexual Assault** includes the following:
 - i. **Rape** is the penetration, or attempted penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the Affirmative Consent of the Complainant. Rape also includes the attempted penetration, no matter how slight, of the vagina or anus with any body part or object, or oral penetration by a sex organ of another person, without the Affirmative Consent of the Complainant, with the present ability and the intent to commit Rape.
 - ii. **Fondling** is the touching of the private body parts of another person for the purpose of sexual gratification, without the Affirmative Consent of the victim, including instances where the Complainant is incapable of giving Affirmative Consent because of their age or because of their temporary or permanent mental incapacity.
 - iii. **Incest** is sexual intercourse between persons who are related to each other within the degrees wherein marriage is prohibited by law.
 - iv. **Statutory Rape** is sexual intercourse with a person who is under the age of 18 years, the California statutory age of consent. The definition of Affirmative Consent is that under Article VII.A.3 above.
 - v. **Dating Violence** means physical violence or threat of physical violence committed by a person:
 - i. who is or has been in a social relationship of a romantic or intimate nature with the Complainant; and
 - ii. where the existence of such a relationship shall be determined based on a consideration of the following factors:
 1. The length of the relationship.
 2. The type of relationship.
 3. The frequency of interaction between the persons involved in the relationship.
2. **Domestic Violence** means physical violence or threat of physical violence committed by a current or former spouse or intimate partner of the Complainant, by a person with whom the Complainant shares a child in common, by a person who is cohabitating with or has cohabitated with the Complainant as a spouse or intimate partner, or by a person similarly situated to a spouse of the Complainant.
3. **Stalking** means engaging in a course of conduct directed at a specific person that would cause a reasonable person to:
 - i. fear for their safety or the safety of others; or
 - ii. suffer substantial emotional distress.

See further information in San Jose State University sexual violence prevention and education statement, Title IX Notice of Nondiscrimination (which includes facts and myths about sexual violence), and Victim's Rights and Options Notice, at www.sjsu.edu/titleix/help/choices/index.php.

Whom to Contact If You Have Complaints, Questions or Concerns

Title IX requires the university to designate a Title IX Coordinator to monitor and oversee overall Title IX compliance. The university Title IX Coordinator is available to explain and discuss the university's complaint process, including the investigation and hearing process; the availability of reasonable supportive measures (both on and off campus regardless of whether the person chooses to report the conduct); the right to file a criminal complaint (for example, in cases of sexual misconduct); how confidentiality is handled; and other related matters. **If you are in the midst of an emergency, please call the police immediately by dialing 9-1-1.**

Title IX Office

Clark Hall, First Floor, Room 126
1 Washington Sq. San Jose, CA 95192
Phone: 408-924-7290 (8 AM - 5 PM)
Text: 669-877-0620 (All Hours)
Email: TitleIX@sjsu.edu

University Police Department

Lieutenant Rafael Alvarez
Field Operations
(408) 924-2145
Email: rafael.alvarez01@sjsu.edu
www.sjsu.edu/campus-life/safety.php

Title IX requires the university to adopt and publish complaint procedures that provide for prompt and equitable resolution of gender discrimination complaints, including sexual harassment and misconduct, as well as provide training, education and preventive measures related to sex discrimination. CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against a Student (or any successor) is the systemwide procedure for all complaints of discrimination, harassment or retaliation made against, other CSU students. CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against an Employee or Third-Party (or any successor procedure) is the systemwide procedure for all complaints of discrimination, harassment or retaliation made against the CSU, a CSU employee or a third party.

Duty to Report

Except as provided below under confidentiality and sexual misconduct, dating violence, domestic violence, and stalking, **any** university employee who knows or has reason to know of allegations or acts that violate university policy shall promptly inform the Title IX Coordinator. These employees are required to disclose all information including the names of the parties, **even where the person has requested that their name remain confidential**. The Title IX Coordinator will determine whether confidentiality is appropriate given the circumstances of each such incident. (See confidential reporting options outlined below.)

Regardless of whether an alleged victim of gender discrimination ultimately files a complaint, if the university knows or has reason to know about possible sexual discrimination, harassment or misconduct, it must review the matter to determine if an investigation is warranted. The university must then take appropriate steps to eliminate any gender discrimination/harassment/misconduct, prevent its recurrence, and remedy its effects.

U.S. Department of Education, Office for Civil Rights (OCR):

(800) 421-3481 (National Headquarters), or (800) 877-8339 (TDD), or ocr@ed.gov (National Headquarters); or (415) 486-5555 (California office), or ocr.sanfrancisco@ed.gov (California office)

If you wish to fill out a complaint form online with the OCR, you may do so using the OCR Electronic Complaint Form.

Safety of the University Community is Primary

The university's primary concern is the safety of its university community members. The use of alcohol or drugs never makes the victim at fault for gender discrimination, harassment or sexual misconduct; therefore, victims should not be deterred from reporting incidents of sexual misconduct out of a concern that they might be disciplined for related violations of drug, alcohol or other university policies. Except in extreme circumstances, victims of sexual misconduct shall not be subject to discipline for related violations of the Student Conduct Code.

Information Regarding University, Criminal and Civil Consequences of Committing Acts of Sexual Violence

Individuals alleged to have committed sexual misconduct may face criminal prosecution by law enforcement and may incur penalties as a result of civil litigation. In addition, students may face discipline at the university, up to and including suspension or expulsion and withholding of their degrees. Employees may face sanctions up to and including suspension, demotion or dismissal from employment, pursuant to established CSU policies and provisions of applicable collective bargaining unit agreements.

Students who are found responsible by the university with gender discrimination, harassment or sexual misconduct will be subject to discipline, pursuant to CSU Policy Prohibiting Discrimination, Harassment, Sexual Misconduct, Sexual Exploitation, Dating Violence, Domestic Violence, Stalking, and Retaliation (Nondiscrimination Policy) Made Against a Students and the California State University and Student Conduct Procedures (see the Student Conduct Procedures Policy, revised on August 14, 2020, or any successor policy) and will be subject to appropriate sanctions. In addition, during any investigation, the university may implement interim measures in order to maintain a safe and non-discriminatory educational environment. Such measures may include but not be limited to: immediate interim suspension from the university; a required move from university-owned or affiliated housing; adjustments to course schedule; and/or prohibition from contact with parties involved in the alleged incident.

Confidentiality and Sexual Misconduct, Dating Violence, Domestic Violence and Stalking

The university encourages victims of sexual misconduct, dating violence, domestic violence or stalking to talk to someone about what happened - so they can get the support they need, and so the university can respond appropriately.

Privileged and Confidential Communications

Physicians, Psychotherapists, Professional Licensed Counselors, Licensed Clinical Social Workers, and Clergy - Physicians, psychotherapists, professional, licensed counselors, licensed clinical social workers, and clergy who work or volunteer on or off campus, acting solely in those roles or capacities as part of their employment, and who provide medical or mental health treatment or counseling (and those who act under their supervision, including all individuals who work or volunteer in their centers and offices) may not report any information about an incident of sexual misconduct to anyone else at the university, including the Title IX Coordinator, without the victim's consent. A

victim can seek assistance and support from physicians, psychotherapists, professional, licensed counselors, licensed clinical social workers and clergy without triggering a university investigation that could reveal the victim's identity or the fact of the victim's disclosure. However, see limited exceptions below regarding when health care practitioners must report to local law enforcement agencies. Health care practitioners should explain these limited exceptions to victims, if applicable.

Sexual Assault and Domestic Violence Counselors and Advocates - Sexual assault and domestic violence counselors and advocates who work or volunteer on or off campus in sexual assault centers, victim advocacy offices, women's centers and health centers (including those who act in that role under their supervision, along with non-professional counselors or advocates who work or volunteer in sexual assault centers, victim advocacy offices, women's centers, gender equity centers, or health centers), may talk to a victim without revealing any information about the victim and the incident of sexual misconduct to anyone else at the university, including the Title IX Coordinator, without the victim's consent. A victim can seek assistance and support from these counselors and advocates without triggering a university investigation that could reveal his/her identity or that a victim disclosed an incident to them. However, see limited exceptions below regarding when sexual assault and domestic violence counselors and advocates must report to local law enforcement agencies. Counselors and advocates should explain these limited exceptions to victims, if applicable.

The university will be unable to conduct an investigation into a particular incident or pursue disciplinary action against a perpetrator if a victim chooses to:

1. Speak only to a physician, professional licensed counselor, licensed clinical social worker, clergy member, sexual assault counselor, domestic violence counselor or advocate; and
2. Maintain complete confidentiality. Even so, these individuals will assist victims in receiving other necessary protection and support, such as victim advocacy, disability services, medical/health or mental health services, or legal services, and will advise victims regarding their right to file a Title IX complaint with the university and a separate complaint with local or university police.

If a victim insists on confidentiality, such professionals, counselors and advocates will likely not be able to assist the victim with: university academic support or accommodations; changes to university-based living or working schedules; or adjustments to course schedules. A victim who at first requests confidentiality may later decide to file a complaint with the university or report the incident to the police, and thus have the incident fully investigated. These counselors and advocates can provide victims with that assistance if requested by the victim. These counselors and advocates will also explain that Title IX includes protections against retaliation, and that the university will not only take steps to prevent retaliation when it knows or reasonably should know of possible retaliation, but will also take strong responsive action if retaliation occurs.

EXCEPTIONS: Under California law, any health practitioner employed in a health facility, clinic, physician's office, or local or state public health department or clinic is required to make a report to local law enforcement if the health practitioner provides medical services for a physical condition to a patient/victim who the health practitioner knows or reasonably suspects is suffering from:

1. A wound or physical injury inflicted by a firearm; or
2. Any wound or other physical injury inflicted upon a victim where the injury is the result of assaultive or abusive conduct (including sexual misconduct, domestic violence, and dating violence).

This exception does not apply to sexual assault and domestic violence counselors and advocates. Health care practitioners should explain this limited exception to victims, if applicable.

Additionally, under California law, **all** professionals described above (physicians, psychotherapists, professional counselors, licensed clinical social workers, clergy, and sexual assault and domestic violence counselors and advocates) are mandatory child abuse and neglect reporters, and are required to report incidents involving victims under 18 years of age to local law enforcement. These professionals will explain this limited exception to victims, if applicable.

Finally, some or all of these professionals may also have reporting obligations under California law to:

1. Local law enforcement in cases involving threats of immediate or imminent harm to self or others where disclosure of the information is necessary to prevent the threatened danger; or
2. To the court if compelled by court order or subpoena in a criminal proceeding related to the sexual misconduct, dating or domestic violence, or stalking incident.

If applicable, these professionals will explain this limited exception to victims.

Reporting

To University or Local Police

If a victim reports to local or university police about sexual misconduct crimes, the police are required to notify victims that their names will become a matter of public record unless confidentiality is requested. If a victim requests that their identity be kept confidential, their name will not become a matter of public record. However, even if the victim requests confidentiality of identity, the University Police should specifically ask the victim if the victim's name can be provided to the Title IX Office so that the Title IX Coordinator can contact the victim to discuss supportive measures that can be offered. If a victim gives consent to law enforcement to provide their name to the Title IX Coordinator, their name will not become a matter of public record. Even if a victim does not give the police permission to provide their name to the Title IX Coordinator, University police will report the facts of the incident itself to the Title IX Coordinator being sure not to reveal to the Title IX Coordinator victim names/identities or compromise their own criminal investigation. The university is required by the federal Clery Act to report certain types of crimes (including certain sex offenses) in statistical reports. However, while the university will report the type of incident in the annual crime statistics report known as the Annual Security Report, victim names/identities will not be revealed.

Reporting to the Title IX Coordinator and other University employees

Most university employees have a duty to report incidents of sexual misconduct when they are on notice of it. When a victim tells the Title IX Coordinator or another university employee about an incident of sexual misconduct, the victim has the right to expect the university to take immediate and appropriate steps to investigate what happened and to resolve the matter promptly and equitably. In all cases, the university strongly encourages victims to report incidents of sexual misconduct directly to the university Title IX Coordinator. As detailed above, in the "Privileged and Confidential Communications" section of this policy, all university employees except physicians, licensed professional counselors, licensed clinical social workers, sexual assault counselors and advocates, must report to the Title IX Coordinator all relevant details about any incidents of sexual misconduct of which they become aware. The university will need to determine what happened - and will need to know the names of the victim(s) and the perpetrator(s), any witnesses, and any other relevant facts, including the date, time and specific location of the incident.

To the extent possible, information reported to the Title IX Coordinator or other university employees will be shared only with individuals responsible for handling the university's response to the incident. The university will protect the privacy of individuals involved in a sexual misconduct violence incident except as otherwise required by law or university policy. A report of sexual misconduct may result in the gathering of extremely sensitive information about individuals in the university community. While such information is considered confidential, university policy regarding access to public records and disclosure of personal information may require disclosure of certain information concerning a report of sexual misconduct. In such cases, efforts will be made to redact the records, as appropriate, in order to protect the victim's identity and privacy and the privacy of other involved individuals. Except as detailed in the section on "Privileged and Confidential Communications" above, no university employee, including the Title IX Coordinator, should disclose the victim's identity to the police without the victim's consent or unless the victim has also reported the incident to the police.

If a victim requests of the Title IX Coordinator or another university employee that their identity remain completely confidential, the Title IX Coordinator will explain that the university cannot always honor that request or guarantee complete confidentiality. If a victim wishes to remain confidential or request that no investigation be conducted or disciplinary action taken, the university must weigh that request against the university's obligation to provide a safe,

non-discriminatory environment for all students, employees, and third parties, including the victim. Under those circumstances, the Title IX Coordinator will determine whether the victim's request for complete confidentiality and/or no investigation can be honored under the facts and circumstances of the particular case, including whether the university has a legal obligation to report the incident, conduct an investigation or take other appropriate steps. Without information about a victim's identity, the university's ability to meaningfully investigate the incident and pursue disciplinary action against the perpetrator may be severely limited. See the Systemwide Sex Discrimination, Sexual Harassment, Sexual Misconduct, Dating and Domestic Violence, and Stalking Policy (or any successor policy) for further details around confidential reporting, and other related matters.

Additional Resources

San Jose State University's sexual misconduct violence prevention and education statement, which includes facts and myths about sexual misconduct violence, at www.sjsu.edu/titleix/policies-procedures-and-training/notice-of-nondiscrimination/index.php.

U.S. Department of Education, regional office
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San Francisco, CA 94102
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TDD (877) 521-2172
Email: OCRSanFrancisco@ed.gov

U.S. Department of Education, national headquarters
Office for Civil Rights (800) 421-3481
TDD (800) 877-8339
Email: OCR@ed.gov

California Coalition Against Sexual Assault
1215 K. Street, Suite 1850
Sacramento, CA 95814
(916) 446-2520

California Coalition Against Sexual Assault Website

1. Domestic and Family Violence, Office of Justice Programs, United States Department of Justice: Intimate Partner Violence
2. National Institute of Justice: Intimate Partner Violence, Office of Justice Programs, United States Department of Justice
3. National Domestic Violence Hotline Website and phone number 1-800-799-SAFE (7233)
4. Office of Violence against Women, United States Department of Justice
5. Centers for Disease Control and Prevention: Intimate Partner Violence

Student Complaint Procedure (Complaints Regarding the CSU)

The California State University (CSU) takes very seriously complaints and concerns regarding the institution. If you have a complaint regarding the CSU, you may present your complaint as follows:

1. If your complaint concerns CSU's compliance with academic program quality and accrediting standards, you may present your complaint on the Western Association of Schools and Colleges (WASC) website. WASC is the agency that accredits the CSU's academic program.
2. If your complaint concerns an alleged violation by CSU of any law that prohibits discrimination, harassment or retaliation based on a protected status (such as age, disability, gender (or sex), gender identity, gender

expression, nationality, race or ethnicity (including color, caste, or ancestry), religion or veteran or military status), you may present your complaint as described in Section XVI (Nondiscrimination Policy).

3. If your complaint concerns an alleged violation by the CSU of other state law, including laws prohibiting fraud and false advertising, you may present your claim complaint to the university president or designee. See Procedure for Student Complaints-Executive Order No. 1063 for details regarding the complaint requirements and complaint process.
4. Other complaints regarding the CSU may be presented to the university dean of students [or other appropriate administrator], who will provide guidance on the appropriate university process for addressing your particular issue.

If you believe that your complaint warrants further attention after you have exhausted all the steps outlined by the university, or by WASC, you may file an appeal with the Assistant Vice Chancellor, Academic and Student Affairs (or designee) at the CSU Chancellor's Office.

This procedure should not be construed to limit any right that you may have to take legal action to resolve your complaint.

Confidential vs. Private

The OEO and the Title IX Office are not confidential resources, however they are private. This means that information shared with these offices will be shared with a select group of university administrators, and should a report move into a formal investigation procedure, with the witnesses who are part of that investigation. Your information will never be publically shared by either office.

Responsible Employees

Unless otherwise specified, all employees have a duty to consult with and refer information to the Title IX Office when they have reason to believe Title IX Prohibited Conduct has occurred, or anytime Title IX Prohibited Conduct is disclosed to them. The following employees do not have a duty to report: Physicians, Psychotherapists, Professional Licensed Counselors, Licensed Clinical Social Workers, and Clergy.

If an employee believes an individual is about to disclose an experience, the employee should remind the individual of their duty to disclose, and offer to connect to a confidential resource.

Confidential Resources

Confidential Resources do not share information. See www.sjsu.edu/titleix/help/resources/index.php.

The Campus Survivor Advocate

Selena Gonzalez
Student Wellness Center, 300B
Phone: 408-924-7300
Email: survivoradvocate@sjsu.edu

Counseling & Psychological Services (CAPS)

Student Wellness Center
Phone: 408-924-5678

Employee Assistance Program (EAP)

Phone: 800-367-7474

Additional Reporting Options

An individual may make a report to the university, to law enforcement, to neither, or to both. Campus Title IX processes and law enforcement investigations operate independently of one another, although the Title IX and Gender Equity Officer may coordinate information with law enforcement.

University Police Department

(408) 924-2222

<https://www.sjsu.edu/campus-life/safety.php>

ROTC Recruiting

San José State University hosts the Air Force Reserve Officers Training Corps program on campus solely in compliance with the federal requirements contained in The Solomon Amendment. This law, passed as an attachment to the FY97 Federal Appropriations Bill, allows the government to deny federal funding, including federal student aid, to any school that does not provide access to ROTC programs and military recruiters on its campus.

San José State University is guided by the principle of equal opportunity, including the conviction that there will be no differential treatment or harassment of persons because of race, color, religion, national origin, age, sex, marital status, pregnancy, disability, veteran's status, or sexual orientation. The university has a firm and unambiguous commitment to the active elimination of discrimination, and the affirmative recruitment of a diverse, multi-racial community of students, faculty and staff.

Privacy Rights of Students in Education Records

The federal Family Educational Rights and Privacy Act of 1974 (20 U.S.C. 1232g) (FERPA) and regulations adopted thereunder (34 C.F.R. 99) set out requirements designed to protect students' privacy in their educational records maintained by the university. The statute and regulations govern access to certain student records maintained by the university and the release of those records. FERPA provides that the university must give students access to most records directly related to the student and must also provide an opportunity to correct the records if the student believes the records are inaccurate, misleading, or otherwise inappropriate. The right to petition to correct a record under FERPA does not include the right to challenge the appropriateness of a grade determined by the instructor. In addition, FERPA generally requires the university to obtain a student's written consent before releasing personally identifiable data pertaining to the student. The university has adopted a set of policies and procedures governing the implementation of FERPA and its regulations. Copies of these policies and procedures may be obtained at the Registrar's Office. Among the information included in the university statement of policies and procedures is:

1. The student records maintained and the information they contain;
2. The university official responsible for maintaining each record;
3. The location of access lists identifying persons requesting or receiving information from the record;
4. Policies for reviewing and expunging records;
5. Student access rights to their records;
6. Procedure for challenging the content of student records; and
7. The student's right to file a complaint with the Department of Education, which enforces FERPA. The Department of Education has established an office and review board to investigate complaints and adjudicate potential FERPA violations. The designated office is: Student Privacy Policy Office, U.S. Department of Education, 400 Maryland Avenue, SW, Washington, D.C. 20202-5920.

FERPA authorizes that the university may release "directory information" pertaining to students. "Directory information" may include the student's name, address, telephone listing, electronic mail address, photograph, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, grade level, enrollment status, degrees, honors, and awards received, and the most recent previous educational agency or institution the student attended. The university may release this "directory information" unless the university has received prior written objection from the student specifying the information the student requests not be released. Written objections must be sent to the Registrar's Office. It should be noted, however, that University Policy S66-20 is more restrictive than the law. SJSU policy guidelines indicate that the only directory information routinely released to outside parties without student consent is enrollment status and degree completion (if applicable). Requests for addresses and telephone numbers are not honored, especially if requested for commercial purposes.

FERPA authorizes the university to provide access to student records without prior student consent to university officials, employees and others who have legitimate educational interests in such access. These persons include those with legitimate reasons to access student records to perform the university's academic, administrative or service functions, and those with a reason for accessing student records associated with their university or other related academic responsibilities. Student records will also be disclosed to the CSU Chancellor's Office to conduct research, to analyze trends, or to provide other administrative services. Student records may also be disclosed without prior student consent to other persons or organizations under certain conditions (e.g., as part of the accreditation or program evaluation, in response to a court order or subpoena, in connection with financial aid, or to other institutions to which the student is transferring).

University Development (Advancement) Programs

Directory information (see definition earlier) may be used by the university for the development of campus affiliated programs.

Career Placement Information

The Career Center may furnish, upon request, information about the employment of students who graduate from programs or courses of study preparing students for a particular career field. Data provided must be in a form that does not allow for the identification of any individual student. This information includes data concerning the average starting salary and the percentage of previously enrolled students who obtained employment.

The information may include data collected from graduates of the university or graduates of all universities in the California State University system.

Student Identification Information

SJSU ID Number

San José State University is concerned about keeping your personal data private. We are required to use Social Security numbers to process payroll; award financial aid and document fees paid for tax relief purposes. However, for all other purposes, we will use your SJSU ID number for identification, rather than your Social Security Number.

Use of Social Security Number

Applicants are required to include their correct social security numbers in designated places on applications for admission pursuant to the authority contained in Section 41201, Title 5, California Code of Regulations, and Section 6109 of the Internal Revenue Code (26 U.S.C. 6109). The university uses the social security number to identify students and their records including identification for purposes of financial aid eligibility and disbursement and the repayment of financial aid and other debts payable to the institution. Also, the Internal Revenue Service requires the university to file information returns that include the student's social security number and other information such as the amount paid for qualified tuition, related expenses, and interest on educational loans. This information is used by the IRS to help determine whether a student, or a person claiming a student as a dependent, may take a credit or deduction to reduce federal income taxes. The Financial Aid Office will also use it to report Federal Work Study earnings to the Federal Department of Education.

Professional Education Scholastic Regulations

Disqualified students may enroll in Professional Education programs; however, the university, in considering applications for readmission and reinstatement, does not accept 400-series course credit as evidence of qualification for reinstatement.

Students desiring to apply extension credit toward the requirements for any degree or teachers' credentials must secure approval from the department that is authorizing the reinstatement.

All students enrolling through Professional Education must meet course prerequisites and are bound by all applicable university regulations given in this catalog, or in the most recent Winter Session, Summer Session or Open University schedule of classes.

Information concerning tuition fees, admission and registration policies and procedures, withdrawal and refund policies, grading systems, academic standards and student advisement may be found in this catalog. Regulations concerning the application of Professional Education credit toward bachelor's degrees and toward residence credit in the university are listed in Credit for Professional Education. For more information, visit the SJSU's State Authorization website, or contact stateauthorization@sjsu.edu.

State Authorization for Distance Education

Distance education authorization only impacts prospective students who are interested in completing a SJSU degree or certificate program (S16-17) while simultaneously residing in another state.

States expect institutions to obtain approval for regulated activities that occur in their state. These activities may include but are not limited to online learning, practical experiences, faculty teaching from another state, marketing, and advertising. The requirements as to which activities require authorization, the application processes, and the costs to comply vary greatly from state to state. An institution's compliance (or lack thereof) can affect its ability to receive federal financial aid.

Accreditation

San José State University is accredited by the Senior College and University Commission of the Western Association of Schools and Colleges (WSCUC). To view SJSU's most recent accreditation letter as well as learn more about visits and reports, please visit the Institutional Accreditation website.

Resolving a Grievance

Students residing outside of California (while attending San José State University's (SJSU's) distance education programs) wishing to resolve a grievance should contact the appropriate office (e.g. Bursar's Office, Financial Aid Office etc.). If the issue persists, please follow the CSU Internal Complaint Process.

CSU Internal Complaint Process

Prior to filing a complaint with a state agency, see Executive Order No. 1063 for details regarding the complaint requirements and process. If you are a student wishing to file a complaint in your home state, please select the state contact at the State Higher Education Executive Officers Association (members list) to file a complaint directly in your state.

Disclosures

Arkansas

Arkansas Higher Education Coordinating Board certification does not constitute an endorsement of any institution, course or degree program. Such certification merely indicates that certain minimum standards have been met under the rules and regulations of institutional certification as defined in Arkansas Code § 6-61-301.

Georgia

After exhausting the below CSU Student Internal Complaint Process, Georgia residents may also file a complaint with the State of Georgia Nonpublic Postsecondary Education Commission using the student complaint form.

Maryland

The following content may be found on the Maryland Higher Education Commission website's:

1. Information on registration with the Commission; and,
2. The process for Maryland students to make complaints.

Minnesota

San José State University is registered with the office pursuant to sections 136A.61 to 136A.71. Registration is not an endorsement of the institution. Credits earned at the institution may not transfer to all other institutions.

Students may contact the Minnesota Office of Higher Education, 1450 Energy Park Drive, Suite 350, St. Paul, MN 55108-5227 or by sending an email to betsy.talbot@state.mn.us. Students may also access our complaints webpage.

Oregon

According to the Oregon Administrative Rules (OAR 583-030-0035(18)(c)), after classes begin for a term, an Oregon student who withdraws from a course is eligible for a partial refund through the middle week of the term. Refunds shall be based on unused instructional time and shall be prorated on a weekly basis for schools using a semester calendar.

Students should attempt to resolve any grievances they may have with their school first. Should attempts to resolve these problems with appropriate school officials fail, or should the student be dissatisfied with the final outcome of the college complaint process, then the Higher Education Coordinating Commission (HECC), can respond to a formal complaint. Students may contact the Higher Education Coordinating Commission, 3225 25th St. SE, Salem, OR 97302 or by sending an email to complaints@hecc.oregon.gov. Students may also access our complaints web page.

Virginia

San José State University is authorized and certified to operate by the State Council of Higher Education for Virginia (SCHEV) (8VAC40-31-30(A)(i)). This authorization is subject to periodic review.

Credits earned at the institution may not transfer to the receiving college, university, or other educational institution and is at the sole discretion of the receiving institution. Students are advised to contact the receiving institution in

advance for evaluation and determination of transferability of credits and/or acceptability of degrees, diplomas, or certificates earned.

Students residing outside of California (while attending San Jose State University's (SJSU) distance education program) wishing to resolve a grievance should contact the appropriate office (e.g. Bursar's Office, Financial Aid and Scholarship Office, etc). If issues persist, please follow the CSU Internal Complaint Process. The State Council of Higher Education for Virginia has the authority to investigate student complaints against specific schools. Visit the PPE Form for Students page for information regarding the SCHEV complaint process.

For information regarding Professional Licensure and Certification, please refer to the CSU Accreditation & State Authorization page pursuant to 34 CFR §668.43(a)(5)(v)(C).

Washington

San José State University is authorized by the Washington Student Achievement Council and meets the requirements and minimum educational standards established for degree-granting institutions under the Degree-Granting Institutions Act. This authorization is subject to periodic review and authorizes San José State University to offer field placement components for specific degree programs. The Council may be contacted for a list of currently authorized programs. Authorization by the Council does not carry with it an endorsement by the Council of the institution or its programs. Any person desiring information about the requirements of the act or the applicability of those requirements to the institution may contact the Council at P.O. Box 43430, Olympia, WA 98504-3430 or by email at degreeauthorization@wsac.wa.gov.

For Washington State residents seeking information and resources about student loan repayment or seeking to submit a complaint relating to your student loans or student loan servicer, please visit the WSAC Student Loan Advocate page or contact the Student Loan Advocate at loanadvocate@wsac.wa.gov.

The transferability of credits earned at San José State University is at the discretion of the receiving college, university, or other educational institution. Students considering transferring to any institution should not assume that credits earned in any program of study at San José State University will be accepted by the receiving institution. Similarly, the ability of a degree, certificate, diploma, or other academic credential earned at San José State University to satisfy an admission requirement of another institution is at the discretion of the receiving institution. Accreditation does not guarantee credentials or credits earned at San José State University will be accepted by or transferred to another institution. To minimize the risk of having to repeat coursework, students should contact the receiving institution in advance for evaluation and determination of transferability of credits and/or acceptability of degrees, diplomas, or certificates earned.

The Washington Student Achievement Council (WSAC) has authority to investigate student complaints against specific schools. WSAC may not be able to investigate every student complaint. Visit the WSAC Student Complaints page for information regarding the WSAC complaint process.

Refund Policy

If SJSU plans to be authorized to offer a program in a particular state but does not obtain approval before the term starts, the student's application fee will be refunded.

Student Rights, Responsibilities & Conduct

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View other related sections in the catalog:

- CSU Nondiscrimination Policy and Title IX
- Privacy Rights of Students in Education Records
- Professional Education Scholastic Regulations

University Policies

To see official SJSU University Policies, see <https://www.sjsu.edu/senate/university-policies/>.

Academic Standards

Students studying for a baccalaureate degree are expected to maintain a grade point average of 2.0 "C" or better in their academic work at SJSU and in their overall collegiate record in order to continue in good standing. In determining a student's eligibility to remain enrolled in the university, both quality of performance and progress toward the student's objective are weighed. Use of grade points and grade point average for all letter-graded courses determines quality of performance. The length of time in meeting requirements is a factor in determining progress toward objectives. While the Registrar's Office makes every effort to notify students of their academic status, it is the student's responsibility to continuously monitor his or her own academic standing at MySJSU (which can be accessed through the one.sjsu.edu portal).

Attendance Policy

University Policy F15-12, Attendance and Participation

Students are expected to attend all meetings for the courses in which they are enrolled as they are responsible for material discussed therein, and active participation is frequently essential to ensure maximum benefit to all class members. In some cases, attendance is fundamental to course objectives; for example, students may be required to interact with others in the class. Attendance is the responsibility of the student.

Participation may be used as a criterion for grading when the parameters and their evaluation are clearly defined in the course syllabus and the percentage of the overall grade is stated.

Academic Integrity Policy

The University emphasizes responsible citizenship and an awareness of ethical choices inherent in human development. Academic honesty and fairness foster ethical standards for all those who depend upon the integrity of the university, its courses, and its degrees. University degrees are compromised and the public is defrauded if faculty members or students knowingly or unwittingly allow dishonest acts to be rewarded academically. This policy sets the standards for such integrity and shall be used to inform students, faculty and staff of the university's Academic Integrity Policy (University Policy F15-7). University Academic Integrity Policies at www.sjsu.edu/studentconduct/policies.php.

Student Role

The San José State University Academic Integrity Policy requires that each student:

1. Know the rules that preserve academic integrity and abide by them at all times. This includes learning and abiding by rules associated with specific classes, exams and course assignments.
2. Know the consequences of violating the Academic Integrity Policy.
3. Know the appeal rights, and the procedures to be followed in the event of an appeal.
4. Foster academic integrity among peers.

Faculty Member Role

The San José State University Academic Integrity Policy requires that each faculty member:

1. Provide a clear and concise course syllabus that apprises students of the Academic Integrity Policy and the ethical standards and supporting procedures required in a course.
2. Make every reasonable effort to foster honest academic conduct. Specifically, examinations should be appropriately proctored or monitored to prevent students from copying, using non-cited resources, or exchanging information. Examinations and answers to examination questions should be kept private. Efforts should be made to give unique and varied assignments.
3. Take action against a student in accordance with this policy when supporting evidence indicates that the student has violated the Academic Integrity Policy.
4. Comply with the rules and standards of the Academic Integrity Policy.

Office of Student Conduct and Ethical Development Role

The San José State University Academic Integrity Policy requires that the Student Conduct Administrator, the Director of the Office of Student Conduct and Ethical Development (SCED)

1. Comply with and enforce the Student Conduct Code which includes the Academic Integrity Policy.
2. Adjudicate student conduct cases and assign administrative sanctions to students who have violated the Student Conduct Code.
3. Serve as a resource for faculty, staff and students on matters of academic integrity and this policy.
4. Ensure dissemination of the policy to the campus community when changes are made to the policy or procedures.

1.0 Definitions Of Academic Dishonesty

1.1 Cheating

At SJSU, cheating is the act of obtaining credit, attempting to obtain credit, or assisting others to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means. Cheating at SJSU includes but is not limited to:

- 1.1.1. Copying, in part or in whole, from another's test or other evaluation instrument including homework assignments, worksheets, lab reports, essays, summaries, quizzes;
- 1.1.2. Submitting work previously graded in another course without prior approval by the course instructor or by departmental policy;
- 1.1.3. Submitting work simultaneously presented in two or more courses, without prior approval of all course instructors or by the department policies of all departments;
- 1.1.4. Using or consulting sources, tools, or materials prohibited by the instructor prior to or during an examination;
- 1.1.5. Altering or interfering with the grading process;
- 1.1.6. Sitting for an examination by a surrogate, or as a surrogate;

1.1.7. Any other act committed by a student in the course of their academic work which defrauds or misrepresents, including aiding others in any of the actions defined above.

1.2 Plagiarism

At SJSU plagiarism is the act of representing the work of another as one's own without giving appropriate credit, regardless of how that work was obtained, and/or submitting it to fulfill academic requirements. Plagiarism at SJSU includes but is not limited to:

1.2.1 knowingly or unknowingly incorporating the ideas, words, sentences, paragraphs, parts of sentences or paragraphs, or the specific substance of another's work without giving appropriate credit, and representing the product as one's own work;

1.2.2 Representing another's artistic/scholarly works such as computer programs, instrument printouts, inventions, musical compositions, photographs, paintings, drawings, sculptures, novels, short stories, poems, screen plays, or television scripts, as one's own.

2.0 Notification of Standards of Detecting Plagiarism

San José State University or its faculty may subscribe to or use plagiarism-detection services. Any plagiarism-detection service used by faculty or with which San José State University contracts shall ensure compliance with FERPA, university data security policies, and accessibility requirements.

Except for the stated purpose of storing submitted work in databases solely for the purpose of detecting plagiarism, any plagiarism-detection service with which San José State University contracts shall, to the fullest extent possible, agree to assure that ownership rights of all submitted work shall remain with the work's author and not with the plagiarism-detection service.

3.0 Sanctions

There shall be two major classifications of sanctions that may be imposed for violations of this policy: academic and administrative. Academic sanctions are those actions related to the course work and/or grades which are the province of the faculty. Administrative sanctions are concerned with a student's status on campus and are acted on by the Office of Student Conduct and Ethical Development. The imposition of either an academic or administrative sanction will not preclude the additional imposition of the other.

3.1 Academic Sanctions

Faculty members are responsible for determining the type of academic sanction to be applied to students involved in incidents of cheating or plagiarism. Faculty may find it helpful to consult with their department chair, senior faculty, and/or the director of SCED in consideration of appropriate academic sanctions. Such sanctions shall be proportional to the offense against the Academic Integrity Policy that has occurred. Usually a form of "grade modification" will be employed. Before sanctions can be employed, the faculty member must have verified the instances of academic dishonesty by personal observation and/or documentation. In all cases, the violation must be reported to the Office of Student Conduct & Ethical Development on the reporting form for violations to the Academic Integrity Policy. The faculty member is expected to maintain in confidence notes and communications between the student and the faculty member as they may be relevant in subsequent disciplinary proceedings or any subsequent legal actions:

Recommended academic sanctions include:

3.1.1 oral reprimand;

3.1.2 repetition of the assignment with sufficient change in instructions such that none of the original assignment can be utilized;

3.1.3 lower grade on the evaluation instrument;

3.1.4 failure on the evaluation instrument;

- 3.1.5 reduction in course grade;
- 3.1.6 failure in the course;
- 3.1.7 recommendation of additional administrative sanctions (SCED to review for possible violations of the Student Conduct Code).

Faculty Discretion

Incidents involving the careless or inept handling of quoted material that fall short of the definitions of cheating or plagiarism, as defined in Items 1.1 and 1.2 of this policy, may be dealt with at the discretion of the faculty member concerned.

The faculty member also has the discretion and obligation to determine whether specific acts by a student fall under the description in 1.1.7.

3.2 Administrative Sanctions

As stipulated in the California Administrative Code, Section 41301 (and outlined in Executive Order 1098: Student Conduct Procedures), violations of the student conduct code and/or cheating or plagiarism in connection with an academic program may warrant expulsion, suspension, probation or a lesser sanction. Administrative action involving academic dishonesty at SJSU is the responsibility of the Office of Student Conduct & Ethical Development.

The Office of Student Conduct & Ethical Development will respond to:

1. referrals from the faculty of violations of the Academic Integrity Policy;
2. repeat violations as brought to attention by the faculty or through the centralized reports filed in the Office of Student Conduct & Ethical Development.

Faculty members will be notified by the Office of Student Conduct & Ethical Development when action has been taken. The Office of Student Conduct & Ethical Development shall maintain a record of students who have been reported for violating the Academic Integrity Policy. The information in this record will be used to identify and discipline students who have been reported.

4.0 Evaluation and Reporting

When a faculty member suspects a violation of the Academic Integrity Policy and is in possession of evidence to substantiate that violation (not excluding a statement of personal observation of the infraction by the faculty member or other SJSU personnel or students in the class), it is the faculty member's responsibility to take the following steps:

4.1 Confront the situation discreetly; that is, faculty members shall not discuss specific charges of cheating, plagiarism, or any other violations involving specific individuals in the classroom or elsewhere before other members of the class.

4.2 Communicate with the student concerning the alleged violation and arrange for a conference to present documentation. In this conference, the student should be advised of the allegation and be made aware of the supporting evidence and probable consequences. The student should be provided the opportunity to provide his/her perspective and respond to the allegation. Faculty members should make their best effort to meet with the student in person, but if that is not feasible, they can communicate in writing. The faculty member is expected to maintain in confidence notes and communications between the student and the faculty member except as they may be relevant in subsequent disciplinary proceedings or any subsequent legal actions.

4.3 Inform the student of the sanctions imposed in accordance with Section 4.0 if the faculty member still believes that a violation of the Academic Integrity Policy has occurred.

4.4 Report the alleged infraction and the academic action taken to the Office of Student Conduct & Ethical Development on the reporting form for violations to the Academic Integrity Policy. The form identifies the faculty member, student involved, and type of violation (cheating or plagiarism) and includes a description of the incident and the academic sanctions imposed. Office of Student Conduct & Ethical Development shall review the academic

sanctions imposed by the faculty member and determine whether they are justified in light of the provisions of the Student Conduct Code and commensurate with university norms of severity. Office of Student Conduct & Ethical Development shall further determine whether it will impose administrative sanctions. The faculty member must submit a copy of the supporting documentation to the Academic Integrity Reporting Form. After this initial report, no additional academic sanctions may be levied. Academic sanctions may not be imposed without a report to the Office of Student Conduct & Ethical Development. Should the faculty member neglect to file an appropriate report to the Office of Student Conduct & Ethical Development, any academic sanction imposed is invalid until the report is filed. All instances of ethical misconduct should be known to the university and reported to the Office of Student Conduct & Ethical Development. They should be reviewable and alterable by university oversight personnel, specifically the Director of the Office of Student Conduct & Ethical Development.

4.5 The instructor may impose the recommended penalty and make the report called for in Section 4.4 without a conference when a student fails to attend a scheduled conference to discuss the alleged dishonesty, or when the apparent dishonesty is detected only near the end of the semester and the faculty makes a good-faith effort to contact the student but is unable to do so. In either case, the student's right to appeal is preserved.

5.0 Protection of Rights

5.1 Students are guaranteed due process, including the right to be informed of the charges and nature of the evidence supporting the charges and to have a meeting with the faculty member, Office of Student Conduct & Ethical Development, or other decision makers. At any such meeting, statements and evidence on behalf of the student may be submitted. This policy is not intended to deny the right to appeal of any decision through appropriate university channels.

5.2 Office of Student Conduct & Ethical Development shall review the academic sanction imposed by a faculty member on a student and determine whether evidence exists in support of the instructor's allegation. It shall also make an assessment of the proportionality of the sanction to the severity of the infraction and may recommend a reduction or increase in sanction severity. This assessment shall be made in consideration of consistency across the campus.

5.3 If upon review by the Office of Student Conduct & Ethical Development, the student is found not responsible of the charges or if insufficient evidence has been presented by the instructor to establish responsibility, then the student shall be exonerated and the case dismissed. In this event, the record of the alleged violation shall be expunged and academic sanctions against the student prohibited, barring an appeal by the faculty member to the Board of Academic Freedom and Professional Responsibility (BAFPR). If the Office of Student Conduct & Ethical Development finds that sanctions should be modified, the instructor must make those modifications, again barring an appeal by the faculty member to the BAFPR. Should the instructor refuse to lift or modify the sanctions recommended by SCED, the case shall be referred to the BAFPR. This section represents an exception to University Policy S99-9, Section IV.2.

5.4 If the BAFPR upholds the findings of the Office of Student Conduct & Ethical Development to exonerate the student or to modify the sanction, the instructor must lift the sanction imposed or modify it accordingly. If the instructor refuses to do so, as per CSU Executive Order 1037, "it is the responsibility of other qualified faculty to do so ... [i.e.] one or more persons with academic training comparable to the instructor of record who are presently on the faculty at that campus." Preferably, the department chair or school director, in conjunction with associate dean of the relevant college, shall be compelled to do so. If the remedial action has not been taken within a reasonable time as determined by the BAFPR, a request to the President, Provost or appropriate vice president can be made by the BAFPR chair and/or student to expedite the resolution.

5.5 All reasonable accommodations shall then be provided to the exonerated student if there is a fear of retaliation by the instructor. Accommodations might include the ability to retake the course without charge from a different instructor or to substitute a different course (the latter if approved by the student's advisor). If retaking the same course, credit for assignments completed in the previous attempt shall be afforded if comparable. Academic standing shall revert to the standing that would have existed if the sanction had not been imposed.

5.6 Student Appeal Process. An appeal must be filed in writing to the BAFPR before the last day of instruction of the semester following that in which the academic sanction was imposed. The sanctions imposed and the Office of Student and Ethical Conduct findings shall be taken up by the BAFPR within 30 days of the official filing of the appeal. Evidence submitted by both student and faculty member shall be considered and the determination of responsibility shall be assessed.

6.0 Threats

Threats against any member of the faculty as a consequence of implementing this policy on academic integrity shall be cause for disciplinary action under Section 41301, Title 5, California Code of Regulations, and may also result in civil and criminal action.

7.0 Dissemination of Information

7.1 This policy shall be published in the University Catalog and on the university website. There shall also be copies of this policy in every department office and in the Office of Student Conduct & Ethical Development.

7.2 Dissemination of this information shall be the responsibility of the Office of Student Conduct & Ethical Development.

7.3 The Office of Student Conduct & Ethical Development shall submit a statistical report on the number and type of infractions and their eventual disposition to the Academic Senate annually.

7.4 Colleges and departments are encouraged to discuss periodically this policy at faculty meetings, including discussion of strategies for ensuring academic integrity among students and consistency among faculty

7.5 Department chairs and school directors should ensure that new faculty members receive a copy of this policy and an oral explanation at the time they are given their first class assignment.

Complaints

A student involved in a dispute must first attempt to resolve the matter with the other party. If an agreement is not reached, the student should seek the aid of the Student Ombudsperson or the immediate supervisor of the other party. Students may seek the counsel of the Student Ombudsperson before speaking with parties directly involved in the conflict. If this informal process fails to resolve the matter, the student should contact the Student Ombudsperson regarding the formal complaint process.

Complaint Procedures - Alleged Violations of State Law

Student/Applicant Complaint Procedure for Alleged Violations of State Law Not Covered by Another CSU Complaint Procedure

Executive Order 1069 fulfills the requirements of the Higher Education Act Title IV, 34 Code of Federal Regulations sections 600.9(a)(1)(i)(A) and 668.43(b), by establishing a complaint procedure for CSU students and student applicants alleging that the CSU has violated one or more state laws, where there is no other applicable CSU complaint procedure.

I. Scope of Procedure

This complaint procedure is for CSU students and student applicants who believe the CSU has violated one or more state laws. It does not encompass complaints already covered by another CSU complaint procedure

(e.g., student complaints alleging discrimination, harassment and retaliation, covered by Executive Order No. 1045). It also does not encompass complaints regarding CSU's compliance with academic program quality and accrediting standards; such complaints may be filed with the WASC Senior College and University Commission (WSCUC), the agency that accredits the CSU's academic program, at <https://www.wscuc.org/resources/comments/>.

II. The Complaint

- A. The complaint must be filed within 30 work days of the CSU's alleged violation of one or more state laws, or the complainant's discovery thereof.
- B. The complaint must be made in writing and clearly indicate the intent to file a complaint alleging that the CSU violated one or more state laws or specifically reference this executive order.
- C. The complaint must contain the following:
 - i. The complainant's name, student I.D. number, mailing address and telephone number.
 - ii. The term and year of the complainant's last active academic status or the term and year the complainant sought admission to the university.
 - iii. A detailed description of the specific actions that constituted the alleged violation of one or more state laws, including the specific law or laws alleged to have been violated and, if known, the name(s) and title(s) of the responsible CSU employee(s).
 - iv. The date(s) the alleged improper activities occurred or the condition developed.
 - v. A list of witnesses, if any, including their contact information and the facts known by each.
 - vi. Copies of any documentary evidence that supports the complaint.
 - vii. Descriptions of documents that support the complaint and, if known, where the documents are maintained and by whom if the actual documents are not in the possession of the complainant.
 - viii. A dated and signed statement by the complainant under penalty of perjury that the complaint is true, or is believed by the complainant to be true.
- D. The complaint may be filed with the campus president or designee ("campus administrator").
- E. The complaint must be personally delivered, or sent by electronic or certified mail. The complaint filing date is the date of personal service, the date on the electronic transmission or the postmark date of the mailing.

III. The Level I Campus Investigation

- A. The campus administrator shall review the complaint to determine whether it is timely filed, contains all the required information and falls within the scope of this executive order. If it does, the campus administrator shall notify the complainant in writing within 10 work days of receipt of the complaint that the complaint has been accepted. If it is untimely or does not contain all of the required information, the campus administrator shall notify the complainant in writing within 10 work days of receipt of the complaint that the complaint has not been accepted and state the reasons.

If it is determined that the complaint falls within the scope of another CSU complaint procedure, the campus administrator shall forward the complaint to the appropriate campus official and shall notify the complainant in writing within 10 work days of receipt of the complaint that the complaint has been deemed to fall within the scope of another CSU complaint procedure, why, and to whom the complaint has been forwarded. The administrator shall not forward the complaint or disclose the complainant's identity to anyone who has or appears to have a conflict of interest in regard to the allegation(s).

- B. If the complainant raises any new allegations after the complaint has been accepted, the campus administrator shall decide whether to include those allegations as part of the complaint. If they are not included as part of the initial complaint, the complainant shall be advised of the need to file a new complaint to address those allegations.
- C. The campus administrator shall investigate the claim, or may appoint a third party to conduct an investigation. The investigator shall be a management personnel plan employee or an external consultant experienced in conducting investigations. If the complaint is against the CSU, the chancellor or any Chancellor's Office employee, campus president or vice president, the campus administrator shall consult with the Associate Vice Chancellor, Academic Affairs at the Chancellor's

Office, who shall determine the appropriate handling of the complaint. The timelines and procedures for the process remain the same.

- D. The complainant is required to fully cooperate in the investigation, and must participate in a timely intake interview. If the complainant does not cooperate, the campus administrator may end the investigation.
- E. CSU employees are required to cooperate with the investigation, be truthful, maintain confidentiality, and provide all relevant and/or requested information to the investigator.
- F. Complaints and other information gathered during the course of the investigation by the university shall be shared only with individuals who have a legitimate business reason to know.

IV. The Level I Campus Decision

The campus administrator shall make the final decision and issue a letter of determination to the complainant no later than 60 work days from the date the complaint was filed, unless s/he determines that extenuating circumstances warrant an extension of time. In no case shall the decision letter be issued later than 90 work days from the date the complaint was filed.

- i. Within the investigation period, the investigator must make findings of fact and conclusions regarding the allegations, which s/he shall reduce to an investigative report. Preponderance of the evidence is the applicable standard: in order to establish a fact, the investigator must find that the evidence on one side outweighs the evidence on the other side.
- ii. The report should include the following information:
 - 1. A summary of the allegations.
 - 2. A description of the investigative process.
 - 3. The preponderance of the evidence standard used to determine whether a violation occurred.
 - 4. The evidence considered.
- iii. A determination of whether the allegations were found to be substantiated.
- iv. Within the time frame specified above, the campus administrator shall notify the complainant in writing of the outcome. The notification should include a summary of the allegations, a description of the investigative process, the preponderance of the evidence standard used, the evidence considered and a determination of whether the allegations were found to be substantiated. The notification shall also inform the complainant what, if any, actions were or will be taken (specific employee discipline is confidential), and of his/her option to file an appeal under Article V of this executive order. The campus administrator shall maintain a copy of the notification as required by the applicable document retention policy(ies).

II. The Level II Chancellor's Office Review and Decision

- A. If the complainant is not satisfied with the campus decision, s/he may file a Level II appeal with the Office of the Chancellor no later than 10 work days after receipt of the Level I decision. Level II appeals shall be addressed to: Associate Vice Chancellor, Academic Affairs, CSU Office of the Chancellor, 401 Golden Shore 6th Floor, Long Beach, California 90802.
- B. The appeal shall be in writing and must detail the specific disagreements with the campus decision. The issues raised on appeal shall be limited to those raised during the Level I process.
- C. The Associate Vice Chancellor, Academic Affairs or designee shall review the issues raised on appeal to determine whether the campus has adequately processed and addressed the complaint and/or whether the preponderance of the evidence indicates that there has been a violation of state law.
- D. The Associate Vice Chancellor, Academic Affairs or designee shall issue a decision no later than 60 work days after receipt of the appeal unless s/he determines that extenuating circumstances warrant an extension of time. In no case shall the final decision letter be issued later than 90 work days from the date the appeal was filed. The decision shall include a summary of the issues raised on appeal, a description of the review process, the preponderance of the evidence standard used, the evidence considered and a final decision. The notification shall also inform the complainant what, if any, actions were or will be taken (specific employee discipline is confidential), and note that the CSU's review of the complaint is now considered final and complete. A copy of the final decision letter shall be provided to the campus administrator.

II. General Provisions

- A. Work days are defined as Monday through Friday, excluding all official holidays or campus closures at the campus where the complaint originated.
- B. A student/applicant must proceed with a complaint in good faith. A student who knowingly and intentionally files a false complaint, abuses this policy, or files a malicious or frivolous complaint may be subject to discipline. Discipline shall be taken in accordance with Section 41301, Title 5, California Code of Regulations.
- C. When issuing a Level I or II response, personal delivery or certified mail shall be used. If personal delivery is used, a signature acknowledging the calendar date of delivery shall be obtained which will establish the date of response. If certified mail delivery is used, the postmark shall establish the date of response.
- D. The CSU is not obligated under this executive order to investigate a complaint not timely filed under its provisions. Regardless, the CSU may investigate the underlying allegations if it determines the circumstances warrant investigation. Also, if the circumstances warrant investigation, the CSU may waive the time limits and choose to process the complaint under the complaint process set forth herein.
- E. CSU will notify the California Department of Finance, Office of State Audits and Evaluation, and the Bureau of State Audits, of all cases of actual or suspected fraud, theft or other irregularities it learns of as the result of any complaint made under this executive order.
- F. Time periods set forth in this executive order may be extended by the campus administrator and, at Level II, by the Associate Vice Chancellor, Academic Affairs up to the specified maximums, if any, provided s/he informs the complainant of the new time period in writing.
- G. Care shall be taken to keep confidential the identity of the complainant in so far as feasible and consistent with the law.
- H. CSU employees are prohibited from retaliating against complainants or others who cooperate with the investigation.

Effective: September 1, 2011

Model Complaint Procedure

Model complaint procedure for CSU students/applicants in compliance with HEA Title IV, 34 CFR, Sections 600.9 (a)(1)(i)(A) and 668.43(b)

Student/Applicant Complaint Procedure Notice

The California State University takes very seriously complaints and concerns regarding the institution. If you have a complaint regarding the CSU, you may present your complaint as follows:

1. If your complaint concerns CSU's compliance with academic program quality and accreditation standards, you may present your complaint on the WASC Senior College and University Commission (WSCUC) website. WSCUC is the agency that accredits the CSU's academic program.
2. If your complaint concerns an alleged violation by CSU of a state law, including laws prohibiting fraud and false advertising, you may present your claim to the campus president or designee at [e-mail address]. The president or designee will provide guidance on the appropriate campus process for addressing your particular issue.

If you believe that your complaint warrants further attention after you have exhausted all the steps outlined by the president or designee, or by WSCUC, you may file an appeal with the Associate Vice Chancellor, Academic Affairs at the CSU Office of the Chancellor.

Note: Most complaints made to media outlets or public figures, including members of the California legislature, Congress, the Governor, or individual CSU trustees, are referred to the chancellor of the CSU.

Nothing in this disclosure should be construed to limit any right that you may have to take civil or criminal legal action to resolve your complaint.

The CSU has provided this disclosure to you in compliance with the requirements of the Higher Education Act of 1965, as amended, as regulated in 34 Code of Federal Regulations sections 600.9(a)(1)(i)(A) and 668.43(b).

Course Syllabi

Course Syllabi, University Policy, S16-9.pdf

Course syllabi enable students to better understand and fulfill their responsibilities as learners in courses. They are a necessary tool in higher education to enable students to take part in the learning process through knowing what is expected of them and what they can expect from the course. Student success is aided by students knowing in advance as much as possible about the course requirements so that they can plan their study time and coordinate work on assignments from multiple courses. Student success is also aided by encouraging students to contact their professors and providing information about key university policies to which they are subject. In addition, syllabi provide an opportunity to model thorough, clear, professional communication.

Review Syllabi Information Website.

Educational Equity

The California State University defines "educational equity" to be "...justice, equal opportunity, fairness and impartiality in the educational processes affecting under-represented minorities. It involves the implementation of programs designed to attract, admit and support students heretofore excluded from full participation in the university by conditions of educational and economic disadvantages" (Educational Equity: A Continuing Commitment, published by the California State University, 1989).

The Office of Diversity, Equity and Inclusion leads university-wide efforts to ensure a welcoming, safe climate for every member of the San José State community.

San José State University defines diversity as the active appreciation, engagement, and support of ALL campus members in terms of their backgrounds, identities and experiences (as constituted by gender, socioeconomic class, political perspective, age, race, ethnicity, religion, sexual orientation, disability, regional origin, nationality, occupation, language, among others, and the intersection of these aspects).

For more information, visit: www.sjsu.edu/diversity.

Equal Opportunity

San José State University does not discriminate on the basis of accent, age, ancestry, citizenship status, color, creed, disability, ethnicity, gender, genetic information, marital status, medical condition, national origin, race, religion or lack thereof, sex, sexual orientation, transgender, or veteran's status. This policy applies to all SJSU students, faculty and staff programs and activities. Title IX of the Education Amendments of 1972, and certain other federal and state laws, prohibit discrimination on the basis of sex in all education programs and activities operated by the university (both on and off campus). Questions regarding this policy should be directed to the Office for Equal Opportunity, 408-924-2450.

The California State University is committed to providing equal opportunities to men and women CSU students in all campus programs, including intercollegiate athletics.

For more information, please visit the University Personnel website.

Establishing a Committed Presence in Class

Establishing a Committed Presence in a Class, University Policy F15-3.pdf

Six instructional days before Census Day, i.e. the 14th day of instruction, is the last day for the student to add a class; this is also the last day for an instructor to drop a student who fails to establish a committed presence in the class. "Establishing a committed presence" is defined as the following options for the student:

- In-person classes. Attending the first class meeting or informing the instructor of the intention to continue in the class before 48 hours after the first official class meeting.
- Online classes. Logging on to the LMS class shell on the first scheduled day of the class or informing the instructor of the intention to continue in the class before 48 hours after the official class start date.

Faculty Office Hours

University Policy S12-1.pdf, Faculty Office Hours

Today's teaching and learning dynamics have changed dramatically for both students and faculty, with a much greater reliance on electronically mediated methods for communication. Faculty may now spend many hours in "unofficial" office hour time (including evenings and weekends) responding to students' instructional needs. These consultations are frequently held outside of the physical "official" office hours, but nonetheless constitute instructional and advising time. Faculty members are expected to be available to their students for instruction-related support and advising. To achieve this availability faculty members are expected to schedule office hours during which they will be available to their students for consultation.

Disciplinary Action Statement

Students who fail to comply with federal, state, and local laws governing the use of alcohol, illicit drugs, and other grounds upon which student discipline can be based, will be subject to sanctions ranging from disciplinary probation up to and including expulsion from the California State University. California State University Executive Order 1098 entitled Student Conduct Procedures governs the procedures that the University follows in student discipline cases.

Student Fairness Committee

The Student Fairness Committee is under the jurisdiction of the university's Academic Senate and is guided by University Policy S14-3.pdf. This committee hears complaints of violations of student rights in instructional and curricular matters, including grade appeals, and, when appropriate, makes recommendations for redress. The committee also hears and seeks redress of non-instructional student grievances concerning individual members of the faculty, administration or staff and, when appropriate, makes recommendations for redress.

A grievance can be brought as a result of an unauthorized or unjustified act or decision by a member of the faculty or staff or an administrative officer which in any way adversely affects the status, rights, or privileges of a student. The SFC does not have the authority to receive complaints on matters of sexual harassment, civil rights, disability rights, or equity and diversity. Nor does the SFC deal with allegations of violations of the student code of conduct.

Disputes arising out of assignment of grades or grade appeals shall be considered and decided in accordance with Executive Order 1037. There is a presumption that grades assigned are correct. It is the responsibility of anyone appealing an assigned grade to demonstrate otherwise (EO 1037).

The SFC will hear grade dispute petitions when petitions are deemed to be appropriate and include evidence related to the following conditions:

1. When there is evaluation of students that differs from announced requirements.
2. When there are belated impositions of requirements.

3. When grades are based on criteria other than academic performance in the course.
4. When grading criteria do not provide a clear and consistent method of evaluating students' work or performance.
5. When students' requests for information during the semester regarding their academic progress in the course are not responded to in a reasonable time (e.g., two weeks after the request is made).
6. When students' requests for an explanation of how the posted course grades for a term were determined are not responded to in a reasonable time (e.g., the later of two weeks after the request is made or one week before the add deadline for the fall or spring semester following the term in question).
7. When students are penalized for expressing opinions.
8. When students are given to understand that they are removed from a course without due process of a hearing

Petitions must be filed no later than the end of the subsequent fall or spring semester following that in which the alleged cause of the dispute occurred. Prior to lodging a formal complaint, the student must secure informal and confidential advisement from the Student Ombudsperson. Before the committee will accept a petition, the student must exhaust all available avenues for informal resolution (i.e., prior to filing a petition, consult with the instructor, Department Chair, and the College Dean - if applicable - about the specific complaint).

Any student may contact the Student Ombudsperson: Ombuds intake form, 408-924-5995, Administration Building (ADM) 271.

Student Ombudsperson

What steps should I take if I feel my rights have been violated?

If you feel that your rights have been violated or you would like to have an informal discussion with a confidential and neutral point person on campus you are encouraged to connect with the Student Ombudsperson.

The Student Ombudsperson is an advocate for procedural fairness who supports the integrity of the campus policies and procedures and ensures the equity of their application.

The Student Ombudsperson provides a neutral, confidential, and informal place to discuss a concern with the assurance that no action will be taken, nor will the visit be disclosed to anyone, without consent.

Administration (ADM) 271

408-924-5995

ombuds@sjsu.edu

Ombuds intake form

www.sjsu.edu/ombudsperson

CSU and SJSU Administrative Items

- SJSU Policies - View a list of current University Policies listed chronologically
- Coded Memos - Coded Memos for the CSU system affecting Academic and Student Affairs
- Executive Orders - CSU Executive Orders Indexed by Number
- Presidential Directives - SJSU - Presidential directives and memos address campus/university policies, issues and various topics

Religious Holidays

Accommodation to Students' Religious Holidays, University Policy S14-7.pdf

San José State University shall provide accommodation on any graded class work or activities for students wishing to observe religious holidays when such observances require students to be absent from class. It is the responsibility of the student to inform the instructor, in writing, about such holidays before the add deadline at the start of each semester. If such holidays occur before the add deadline, the student must notify the instructor, in writing, at least three days before the date that he/she will be absent. It is the responsibility of the instructor to make every reasonable effort to honor the student request without penalty, and of the student to make up the work missed.

Student Conduct & Ethical Development

The Office of Student Conduct and Ethical Development promotes fairness and consistency in the administration of the student conduct process while supporting a safe and inclusive living and learning environment. Student Conduct and Ethical Development commits to the principles of empathy, ethics, equity, integrity, and respect.

Through effective prevention (interactions, outreach, presentations) and response (student conduct process) initiatives, Student Conduct and Ethical Development facilitates ethical development, effective decision making, and problem solving skills and contributes to students' personal and academic success.

Student Conduct & Ethical Development

Administration (ADM) 269

408-924-5985

www.sjsu.edu/studentconduct

Student Conduct Code

Title 5, California Code of Regulations, §41301. Standards for Student Conduct

a. Campus Community Values

The university is committed to maintaining a safe and healthy living and learning environment for students, faculty, and staff. Each member of the campus community should choose behaviors that contribute toward this end. Students are expected to be good citizens and to engage in responsible behaviors that reflect well upon their university, to be civil to one another and to others in the campus community, and contribute positively to student and university life.

b. Grounds for Student Discipline

Student behavior that is not consistent with the Student Conduct Code is addressed through an educational process that is designed to promote safety and good citizenship and, when necessary, impose appropriate consequences. The following are the grounds upon which student discipline can be based:

1. Dishonesty, including:
 - A. Cheating, plagiarism, or other forms of academic dishonesty that are intended to gain unfair academic advantage.
 - B. Furnishing false information to a university official, faculty member, or university office.
 - C. Forgery, alteration, or misuse of a university document, key, or identification instrument.
 - D. Misrepresenting oneself to be an authorized agent of the university or one of its auxiliaries.
2. Unauthorized entry into, presence in, use of, or misuse of university property.
3. Willful, material and substantial disruption or obstruction of a university-related activity, or any on-campus activity.
4. Participating in an activity that substantially and materially disrupts the normal operations of the university, or infringes on the rights of members of the university community.
5. Willful, material and substantial obstruction of the free flow of pedestrian or other traffic, on or leading to campus property or an off-campus university-related activity.
6. Disorderly, lewd, indecent, or obscene behavior at a university-related activity, or directed toward a member of the university community.

7. Conduct that threatens or endangers the health or safety of any person within or related to the university community, including physical abuse, threats, intimidation, harassment, or sexual misconduct.
8. Hazing or conspiracy to haze. Hazing is defined as any method of initiation or pre- initiation into a student organization or student body, whether or not the organization or body is officially recognized by an educational institution, which is likely to cause serious bodily injury to any former, current, or prospective student of any school, community college, college, university or other educational institution in this state (Penal Code 245.6), and in addition, any act likely to cause physical harm, personal degradation or disgrace resulting in physical or mental harm, to any former, current, or prospective student of any school, community college, college, university or other educational institution. The term "hazing" does not include customary athletic events or school sanctioned events. Neither the express or implied consent of a victim of hazing, nor the lack of active participation in a particular hazing incident is a defense. Apathy or acquiescence in the presence of hazing is not a neutral act and is also a violation of this section.
9. Use, possession, manufacture, or distribution of illegal drugs or drug-related paraphernalia, (except as expressly permitted by law and university regulations) or the misuse of legal pharmaceutical drugs.
10. Use, possession, manufacture, or distribution of alcoholic beverages (except as expressly permitted by law and university regulations), or public intoxication while on campus or at a university-related activity.
11. Theft of property or services from the university community, or misappropriation of university resources.
12. Unauthorized destruction, or damage to university property or other property in the university community.
13. Possession or misuse of firearms or guns, replicas, ammunition, explosives, fireworks, knives, other weapons, or dangerous chemicals (without the prior authorization of the university president) on campus or at a university-related activity.
14. Unauthorized recording, dissemination, or publication of academic presentations (including handwritten notes) for a commercial purpose.
15. Misuse of computer facilities or resources, including:
 - A. Unauthorized entry into a file, for any purpose.
 - B. Unauthorized transfer of a file.
 - C. Use of another's identification or password.
 - D. Use of computing facilities, campus network, or other resources to interfere with the work of another member of the university community.
 - E. Use of computing facilities and resources to send obscene or intimidating and abusive messages.
 - F. Use of computing facilities and resources to interfere with normal university operations.
 - G. Use of computing facilities and resources in violation of copyright laws.
 - H. Violation of a university computer use policy.
16. Violation of any published university policy, rule, regulation or presidential order.
17. Failure to comply with directions of, or interference with, any University official or any public safety officer while acting in the performance of their duties.
18. Any act chargeable as a violation of a federal, state, or local law that poses a substantial threat to the safety or well-being of members of the university community, to property within the university community or poses a significant threat of disruption or interference with university operations.
19. Violation of the Student Conduct Procedures, including:
 - A. Falsification, distortion, or misrepresentation of information related to a student discipline matter.
 - B. Disruption or interference with the orderly progress of a student discipline proceeding.
 - C. Initiation of a student discipline proceeding in bad faith.
 - D. Attempting to discourage another from participating in the student discipline matter.
 - E. Attempting to influence the impartiality of any participant in a student discipline matter.

- F. Verbal or physical harassment or intimidation of any participant in a student discipline matter.
 - G. Failure to comply with the sanction(s) imposed under a student discipline proceeding.
20. Encouraging, permitting, or assisting another to do any act that could subject him or her to discipline.
- c. Procedures for Enforcing this Code
The chancellor shall adopt procedures to ensure students are afforded appropriate notice and an opportunity to be heard before the university imposes any sanction for a violation of the Student Conduct Code. [Note: At the time of publication, such procedures are set forth in the California State University Student Conduct Procedures Policy (Reviewed October 6, 2023).
 - d. Application of this Code
Sanctions for the conduct listed above can be imposed on applicants, enrolled students, students between academic terms, graduates awaiting degrees, and students who withdraw from school while a disciplinary matter is pending. Conduct that threatens the safety or security of the university community, or substantially disrupts the functions or operation of the university is within the jurisdiction of this Article regardless of whether it occurs on or off campus. Nothing in this Code may conflict with Education Code Section 66301 that prohibits disciplinary action against students based on behavior protected by the First Amendment.

Title 5, California Code of Regulations, §41302. Disposition of Fees: University Emergency; Interim Suspension.

The president of the university may place on probation, suspend, or expel a student for one or more of the causes enumerated in Section 41301. No fees or tuition paid by or for such student for the semester, quarter, or summer session in which the student is suspended or expelled shall be refunded. If the student is readmitted before the close of the semester, quarter, or summer session in which the student is suspended, no additional tuition or fees shall be required of the student on account of the suspension.

During periods of emergency, as determined by the president of the individual university, the president may, after consultation with the chancellor, place into immediate effect any emergency regulations, procedures, and other measures deemed necessary or appropriate to meet the emergency, safeguard persons and property, and maintain educational activities.

The president may immediately impose an interim suspension in all cases in which there is reasonable cause to believe that such an immediate suspension is required in order to protect lives or property and to insure the maintenance of order. A student placed on interim suspension shall be given prompt notice of charges and the opportunity for a hearing within 10 days of the imposition of interim suspension. During the period of interim suspension, the student shall not, without prior written permission of the president or designated representative, enter any of the CSUs other than to attend the hearing. Violation of any condition of interim suspension shall be grounds for expulsion.

Student Conduct Procedures

SJSU is committed to ensuring a safe learning and living environment for students, faculty, and staff. The privilege of attending San José State University is accompanied by certain responsibilities to ensure this environment. The California Code of Regulations, Title 5, Section 41301 establishes behavioral expectations of our students to promote safety and good citizenship. The California State University issued Executive Order 1098, entitled, Student Conduct Procedures, on June 23, 2015 to outline the procedures for administering the Student Conduct Code as well as ensuring students' rights to due process. The process is intended to be educational in nature, and appropriate sanctions may be administered.

Policy and Implementation

At San José State University the responsibility for administering the Student Conduct Code resides with the Director of Student Conduct and Ethical Development in the Division of Student Affairs. This position is responsible for carrying out the duties in Executive Order No. 1098 assigned to the Student Conduct Administrator, including the determination of whether to initiate disciplinary action.

Students may be accompanied by an advisor of their choice. The advisor's role is limited to observing and providing consultation, support, and advice to the Student. The advisor may not speak on the Student's behalf.

San José State University excludes attorneys from student discipline proceedings except in limited circumstances where there are (a) pending criminal (felony) charges or (b) the recommended sanction is Expulsion. (Refer to Executive Order 1098, Article II, Section C for additional details about attorneys.)

The duties of the president in Executive Order No. 1098 are delegated to the Vice President for Student Affairs, including the appointment of hearing officers (Article II, section B), review of final reports of hearing officers and issuing notice of the final decision (Article III, Sections E and F), and the imposition of interim suspension (Article VI, Sections H and I).

Student Discipline and Conduct

Questions regarding student disciplinary matters should be directed to Student Conduct & Ethical Development, Administration 269, 408-924-5985 or www.sjsu.edu/studentconduct.

Student Disciplinary Process

The student conduct process is governed by Executive Order 1098. Copies of this document are available in Student Conduct & Ethical Development, Administration 269, 408-924-5985 or www.sjsu.edu/studentconduct.

California Code of Regulations

Inappropriate conduct by students or by applicants for admission is subject to discipline as provided in Sections 41301 through 41304 of Title 5, California Code of Regulations.

Disposition of Fees

Disposition of Fees - Campus Emergency - 41302 - Interim Suspension

The President of the campus may place on probation, suspend, or expel a student for one or more of the causes enumerated in Section 41301. No fees or tuition paid by or for such a student for the semester, quarter, or summer session in which he or she is suspended or expelled shall be refunded. If the student is readmitted before the close of the semester, quarter, or summer session in which they are suspended, no additional tuition or fees shall be required of the student on account of the suspension.

During periods of campus emergency, as determined by the president of the individual campus, the President may, after consultation with the chancellor, place into immediate effect any emergency regulations, procedures, and other measures deemed necessary or appropriate to meet the emergency, safeguard persons and property, and maintain educational activities.

The President may immediately impose an interim suspension in all cases in which there is reasonable cause to believe that such an immediate suspension is required in order to protect lives or property and to insure the maintenance of order. A student so placed on interim suspension shall be given prompt notice of charges and the opportunity for a hearing within 10 days of the imposition of interim suspension. During the period of interim

suspension, the student shall not, without prior written permission of the President or designated representative, enter any campus of the California State University other than to attend the hearing. Violation of any condition of interim suspension shall be grounds for expulsion.

Conduct by Applicants for Admission - 41303

Notwithstanding any provision in this Chapter 1 to the contrary, admission or readmission may be qualified or denied to any person who, while not enrolled as a student, commits acts which, were they enrolled as a student, would be the basis for disciplinary proceedings pursuant to Sections 41301 or 41302. Admission or readmission may be qualified or denied to any person who, while a student, commits acts which are subject to disciplinary action pursuant to Section 41301 or Section 41302. Qualified admission or denial of admission in such cases shall be determined under procedures adopted pursuant to Section 41304.

Student Disciplinary Procedures for the California State University - 41304

The chancellor shall prescribe, and may from time to time revise, a code of student disciplinary procedures for the California State University. Subject to other applicable law, this code shall provide for determinations of fact and sanctions to be applied for conduct which is a ground of discipline under Sections 41301 or 41302, and for qualified admission or denial of admission under Section 41303; the authority of the campus president in such matters; conduct-related determinations on financial aid eligibility and termination; alternative kinds of proceedings, including proceedings conducted by a hearing officer; time limitations; notice; conduct of hearings, including provisions governing evidence, a record and review; and such other related matters as may be appropriate. The chancellor shall report to the board actions taken under this section.

Drug and Alcohol Abuse Prevention Program (DAAPP)

The DAAPP is a specific set of comprehensive statements adopted by the university intended to prevent the unlawful possession, use and distribution of illicit drugs and alcohol abuse involving students and employees on campus and at institutionally-recognized events and activities. The current university DAAPP is available for viewing at <https://www.sjsu.edu/clery/docs/SJSU-Drug-and-Alcohol-Abuse-Prevention-Program.pdf>. A paper copy of the DAAPP is available upon request by contacting the Office of the Clery Director by phone at 408-924-1501 or by email at clerycompliance@sjsu.edu.

Jeanne Clery Disclosure of Campus Security Policy and Crime Statistics Act and Campus Housing Fire Safety Notification

Pursuant to the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, the Annual Security Report (ASR) is also now available for viewing at <https://www.sjsu.edu/clery/docs/SJSU-Annual-Security-Report.pdf>. The ASR contains the current security and safety-related policy statements, emergency preparedness and evacuation information, crime prevention and sexual assault prevention information, and information about drug and alcohol prevention programming. The ASR also contains statistics of Clery crimes for San José State University locations for the three most recent calendar years. A paper copy of the ASR is available upon request by contacting the Office of the Clery Director by phone at 408-924-1501 or by email at clerycompliance@sjsu.edu.

Pursuant to the Higher Education Opportunity Act, the Annual Fire Safety Report (AFSR) is also available for viewing at <https://www.sjsu.edu/clery/docs/SJSU-Annual-Fire-Safety-Report.pdf>. The purpose of this report is to disclose statistics for fires that occurred within SJSU on-campus housing facilities for the three most recent calendar years, and to distribute fire safety policies and procedures intended to promote safety on Campus. A paper copy of the

AFSR is available upon request by contacting the Housing Office by phone at 408-795-5600 or by email at uhs-frontdesk@sjsu.edu.

Sexual Harassment

San José State University is committed to maintaining a learning and working environment free from sexual harassment of its students, employees, and those who apply for employee or student status. Sexual harassment is conduct subject to disciplinary action.

SJSU policy defines sexual harassment to include "behaviors such as sexual advances, request for sexual favors, and other verbal or physical conduct of a sexual nature directed towards an employee, student, or applicant when one or more of the following circumstances are present:

- Submission to or toleration of the conduct is an explicit or implicit term or condition of appointment, employment, admission or academic evaluation
- Submission to or rejection of such conduct is used as a basis for a personnel decision or an academic evaluation affecting an individual
- The conduct has the purpose of interfering with an employee's work performance or creating an intimidating, hostile, offensive or otherwise adverse working environment
- The conduct had the purpose or effect of interfering with a student's academic performance, creating an intimidating, hostile, offensive or otherwise adverse learning environment, or adversely affecting any student.

All complaints dealing with sexual harassment should be directed to the Office for Equal Opportunity.

Programs Leading to Licensure and Credentialing

Per CSU Memo: Federal Requirements for Posting Licensure and Certification Eligibility

Admission into programs leading to licensure and credentialing does not guarantee that students will obtain a license or credential. Licensure and credentialing requirements are set by agencies that are not controlled by or affiliated with the CSU and requirements can change at any time. For example, licensure or credentialing requirements can include evidence of the right to work in the United States (e.g., social security number or taxpayer identification number) or successfully passing a criminal background check. Students are responsible for determining whether they can meet licensure or credentialing requirements. The CSU will not refund tuition, fees or any associated costs to students who determine subsequent to admission that they cannot meet licensure or credentialing requirements. Information concerning licensure and credentialing requirements are available from the program directors.

The California State University has not determined whether its programs meet other states' educational or professional requirements for licensure and certification. Students enrolled in a California State University program who are planning to pursue licensure or certification in other states are responsible for determining whether they will meet their state's requirements for licensure or certification. This disclosure is made pursuant to 34 CFR §668.43(a)(5)(v)(C).

The list of all U.S. states and territories identifies for which the institution has determined that:

- Yes - Curriculum meets the state educational requirements for licensure or certification;
- No - Curriculum does not meet the state educational requirements for licensure or certification; or,
- Blank - Institution has not made a determination that its curriculum meets the state educational requirements for licensure or certification.

Faculty & Administration

Year in parentheses indicates date of appointment as a full-time member of the faculty or administration. Retired faculty and staff awarded Emeritus honors are listed on the Emeritus Faculty and Staff. Staff information is available in the SJSU Directory.

A

Abousalem, Mohamed - *Vice President, Research and Innovation* (2019)

BS, Alexandria University, Egypt

MBA, Santa Clara University

MS and PhD, University of Calgary, Canada

Abramson, Tzvia - *Professor, Biological Sciences* (2005)

BS and PhD, Ben Gurion University, Israel

Abri, Faranak - *Assistant Professor, Computer Science* (2022)

PhD, Texas Tech University

Ackerman, Brian - *Marine Operations Manager, Moss Landing Marine Lab* (2016)

BS, Loyola Marymount University

Adams, Ericka - *Associate Professor, Justice Studies* (2010)

BA, John Jay College of Criminal Justice

MA and PhD, University of Illinois at Chicago

Adams, Walter - *Assistant Professor, Biological Sciences* (2019)

PhD, University of California, Santa Cruz

Agbay, Alejandro (Drew) - *Director, Student Outreach and Recruitment* (2001)

MA, San Jose State University

Agarwal, Raghu - *Professor, Mechanical Engineering* (1980)

BSME, Michigan Technological University

MS and PhD, Texas A&M University

Agee, Ann - *Associate Librarian, University Library* (2008)

BA, University of California, Davis

MLIS, San Jose State University

Aggarwal, Nitin - *Professor, Information Systems and Technology* (2007)

BS, Delhi University

MBA, Lal Bahadur Shastri Institute of Management, India

PhD, Texas Tech University

Agrawal, Asha Weinstein - *Professor, Urban and Regional Planning* (2002)

BA, Harvard University

MS, London School of Economics and Political Science

PhD, University of California, Berkeley

Aguilar, Debra - *Dispatch and Communications Manager, UPD Administrative Services* (2021)

Aguilar, Katya - *Professor, Teacher Education* (2005)

BA, William Jewell College

MS and PhD, Kansas State University

Aguiñaga, José - *Assistant Professor, School of Information* (2022)

BA, University of San Diego

Ed. D, Northern Arizona University

Agumbe Suresh, Mahima - *Assistant Professor, Computer Engineering* (2015)

BTech, National Institute to Technology, Karnataka, India

PhD, Texas A&M University

Aiello, Ivano - *Interim Director, Moss Landing Marine Lab* (2001)

PhD, Foreign Institution

Al-Manaseer, Akthem - *Professor, Civil and Environ Engineering* (1996)

BS, Basrah University, Iraq

PhD, Glasgow University

Alaniz, Maria Luisa - *Professor and Chair, Chicana and Chicano Studies* (1988)

BA and MA, San Jose State University

PhD, Stanford University

Albert, Leslie - *Professor, Information Systems and Technology* (2007)

BS, Florida State University

MBA and PhD, University of Oklahoma

Albin, Greg - *Captain of Administration and Operations Bureau, UPD Administrative Services* (2018)

AA, Evergreen Valley College

Aleksander, Jason - *Professor, Philosophy* (2018)

BA, University of Texas, Austin

PhD, Vanderbilt University

Alexander, Brandy - *Student Affairs Case Manager, Student Services* (2022)

MA, California State University, Stanislaus

Alexander, Laura - *Senior Associate Athletics Director for Student Wellness, Student-Athlete Academic Services* (2013)

MS, Chapman University

Allen, Monica - *Associate Professor, Public Health and Recreation* (2013)

BS and MPH, Loma Linda University

DrPH, University of California, Berkeley

Allen, Heather - *Associate Professor, Music and Dance* (2009)

BSN, San Jose State University

MA, California State University, Long Beach

Allison, Chavon - *Director of Care Experience, Shared Services - SWC* (2022)

MS, California State University, East Bay

Alimo, Craig - *Director of Social Justice Education, Office of Diversity* (2019)

BA, Rider College, New Jersey

MS, Northeastern University

PhD, University of Maryland, College Park

Altura, Thomas - *Associate Professor, School of Management* (2015)

BA, MBA, and PhD, University of California, Los Angeles

Alvarez, Monica - *Custodial Crew Manager, Custodial* (2015)

Amirkhani, Kouros - *Assistant Professor, Accounting and Finance* (2021)

MS, Tarbiat Modares University, Iran

PhD, Washington State University

Amirkulova, Feruza - *Assistant Professor, Mechanical Engineering* (2018)

BS and PhD, Samarkand State University named after Alisher Navoiy

MS and PhD, Rutgers University, New Brunswick

Anderson, Benjamin - *Associate Professor, Accounting and Finance* (2015)

BS and MAc, Truman State University

PhD, University of Arkansas, Little Rock

Anderson, Curt - *Senior Director for Marketing, Communications, and Outreach, College of Professional and Global Education* (2013)

BA and MA, San Francisco State University

Anderson, James - *Director of Campus Application Support, Student Affairs Systems and Student Success Programs* (1998)

BS, San Jose State University

Anderson, Mary Elizabeth - *Associate Dean of Research and Faculty Success, College of Humanities and the Arts* (2023)

BA, University of California, Davis

MA, California State University, Sacramento

MFA, University of California, Davis

PhD, University of California, Davis

Anderson, Selena - *Assistant Professor, English* (2017)

PhD

Andonian, Lynne - *Professor, Occupational Therapy* (2004)

BS, Boston University

MA, The Pratt Institute

PhD, Saybrook Graduate Institute

Andreopoulos, William - *Assistant Professor, Computer Science* (2019)

BS, McMaster University, Canada

MS, University of Toronto, Canada

PhD, York University, Canada

Anyon, Yolanda - *Associate Professor, School of Social Work* (2021)

MSW and PhD, University of California, Berkeley

Arabit, Luis - *Assistant Professor, Occupational Therapy* (2018)

BS, University of the Philippines, Manila

MS, Texas Tech University

DOT, University of Saint Augustine, Florida

Armaline, William - *Associate Professor, Sociology and Interdisciplinary Social Sciences* (2007)

BA, University of Toledo

MA and PhD, University of Connecticut

Armani, Amir - *Assistant Professor, Mechanical Engineering* (2018)

PhD, Missouri University of Science and Technology

Armstrong, Amber - *Director, Special Events* (2019)

BA, St. Mary's University

JD, University of Texas School of Law

Armstrong, Cole - *Assistant Professor, Kinesiology* (2015)

BS and MS, University of Central Missouri

PhD, Florida State University

Artiga-Purcell, Alejandro - *Assistant Professor, Communication Studies* (2022)

BA, Bowdoin College

MA, Erasmus University, Rotterdam

PhD, University of California, Santa Cruz

Ashley, Terryn - *Manager, Payroll & ESS, University Personnel* (1999)

BS, University of California, Monterey Bay

Asplund, Curtis - *Assistant Professor, Physics and Astronomy* (2020)

PhD, University of California, Santa Barbara

Asuncion, Arlene - *Professor, Psychology* (1995)

BA and PhD, University of California, Santa Barbara

Attar, Nada - *Assistant Professor, Computer Science* (2018)

BSs, King AbdulAziz University, Saudi Arabia

MS, Tufts University

PhD, University of Massachusetts, Boston

August, Amy - *Assistant Professor, Sociology and Interdisciplinary Social Sciences* (2020)

BA and MA, University of Illinois at Chicago

MA, Dominican University, River Forest

PhD, University of Minnesota

Augustowska, Anna - *Director of Digital Marketing and Communications, Strategic Communications and Marketing* (2020)

MA, Arizona State University

Austin, Thomas - *Associate Professor, Computer Science* (2013)

BA, Santa Clara State University

MS, San Jose State University

PhD, University of California, Santa Cruz

Avena, Jennifer - *Assistant Professor, Biological Sciences* (2020)

BA, Ohio Wesleyan University

PhD, University of Colorado at Boulder

Azcona, Stevan - *Assistant Professor, Chicana and Chicano Studies* (2018)

BA, University of California, Santa Barbara

MM and PhD, University of Texas, Austin

B

Baba, Yoko - *Professor, Justice Studies* (1990)

BBA, Kwansai Gakuin University, Japan

MS, Pittsburg State University

MSW, MA, and PhD, University of Oklahoma, Norman

Bacich, Damian - *Professor and Chair, World Languages and Literatures* (2007)

BA, University of San Francisco

MA and PhD, University of California, Los Angeles

Badawy, Mohamed - *Assistant Professor, Electrical Engineering* (2016)

BS, Cairo University

MS and PhD, University of Akron

Baer, Cynthia - *Assistant Professor, English* (1981)

BA, San Jose State University

PhD, University of Washington

Bahuguna, Ramendra - *Professor, Physics and Astronomy* (1989)

BS, Bareilly College, India

MS and PhD, Indian Institute of Technology, New Delhi

Bailey, Christa - *Senior Assistant, University Library* (2003)

BS, Santa Clara University

MS, San Jose State University

Bagley, Brian - *Senior Landscape Manager, Ground* (2017)

BS, University of California, Davis

Bakhru, Tanya - *Professor, Sociology and Interdisciplinary Social Sciences* (2008)

Ba, University of Redlands

MA, San Diego State University

PhD, University College Dublin, Ireland

Balogh, Randy - *Senior Director of Planned Giving, Development University Advancement* (2016)

MS, Bowling Green State University

Bang, Janet - *Assistant Professor, Child and Adolescent Development* (2020)

BS, University of California, Los Angeles

PhD, McGill University, Canada

Barash, Mark - *Assistant Professor, Justice Studies* (2019)

BS and MS, Hebrew University of Jerusalem, Israel

PhD, Bond University, Australia

Barez, Fred - *Professor and Chair, Mechanical Engineering* (1985)

BS, Michigan Technological University

MS and PhD, University of California, Berkeley

Bargas, Darlene - *Manager, Instructional and Meeting Spaces* (2005)

AS, Monterey Peninsula College

Barrera, Magdalena - *Vice Provost for Faculty Success, Faculty Success* (2008)

BA, University of Chicago

PhD, Stanford University

Bartlinski, Stephen - *Director of Sports Medicine, Athletic Training Room* (2020)

BS, Ithaca College

Bashash, Saeid - *Associate Professor, Mechanical Engineering* (2015)

BS, Sharif University of Technology

MS and PhD, Clemson University

Basu, Anuradha - *Professor, Global Innovation and Leadership* (2003)

BEcon (Hons), University of Delhi, India

MBA, Indian Institute of Management, India

MPhil and PhD, University of Cambridge, United Kingdom

Barraza Gerardino, Catalina - *Assistant Professor, Music and Dance* (2021)

BA, Pontifical Javeriana University, Columbia

MA, University of Arkansas

DMA, Michigan State University

Baur, Joshua - *Assistant Professor, Public Health and Recreation* (2014)

BA, University of California, San Diego

MS, University of Michigan

PhD, Oregon State University

Bechert, Andrea - *Associate Professor, Film and Theatre* (2016)

BS, Northern Arizona University

MFA, Ohio University

Bechkoff, Jennifer - *Professor, Marketing and Business Analytics* (2008)

BS and MBA, California State University, Fresno

PhD, University of Cincinnati

Becker, Bernd - *Librarian, University Library* (2009)

MLIS, San Jose State University

Bejar Lopez, Sergio - *Associate Professor, Political Science* (2015)

PhD, University of Notre Dame

Belcastro, Frank - *Administration Bureau Commander, MLK Library Security* (2008)

BS, Fordham University

Bell, Karen - *Assistant Professor, Doctor of Audiology Program* (2021)

AuD, The University of Southern Mississippi

PhD and BA, University of South Florida

Bellofiore, Alessandro - *Associate Professor, Biomedical Engineering* (2014)

MS and PhD, Università Federico II di Napoli, Italy

Benson, Jeffrey - *Associate Professor, Music and Dance* (2011)

BS, New York University

MM and PhD, Florida State University

Benson, Sara - *Assistant Professor, Political Science* (2022)

Beresford, Melissa - *Assistant Professor, Anthropology* (2019)

PhD, Arizona State University

Bergman, Jacqueline - *Assistant Professor, Nutrition, Food Science, and Packaging*

PhD, University of California, Davis

Berkowitz, Rachel - *Assistant Professor, Public Health and Recreation* (2021)

BA, Northwestern University

EMT-B, Loyola University Medical Center

MPH, Emory University

DrPH, University of California, Berkeley

Bernier, Anthony - *Professor, School of Information* (2005)

BA and MLIS, University of California, Berkeley

MA and PhD, University of California, Irvine

Betre, Kassahun - *Assistant Professor, Physics and Astronomy* (2020)

PhD, Stanford University

Beyersdorf, Peter - *Professor, Physics and Astronomy* (2005)

BS, University of Michigan

PhD, Stanford University

Bhagat, Shaum - *Professor and Chair, Audiology* (2017)

BA, Washington State University

MS, The University of Arizona

PhD, University of Texas, Austin

Bishop, William - *Title IX and Gender Equity Officer, Title IX* (2021)

JD, University of the Pacific

Blackmer Reyes, Kathryn - *Librarian, University Library* (2007)

MA, Binghamton University

MLIS, San Jose State University

Blaine, Tobruk - *Assistant Athletics Director for Student-Athlete Development, Athletics Internal Operations* (2017)

BA, Oregon State University

MS, University of Idaho

Blanton, Andrew - *Assistant Professor, Art and Art History* (2014)

MFA, University of North Texas

Blisniuk, Kimberly - *Associate Professor, Geology* (2015)

PhD, University of California, Davis

Blockus, Marilyn - *Professor, Mathematics* (2020)

BA, Elmira College

PhD, Johns Hopkins University

Bodart, Joni - *Associate Professor, School of Information* (2003)

BS, BA, MLIS, MA, and PhD, Texas Woman's University

Boero, Natalie - *Professor, Sociology and Interdisciplinary Social Sciences* (2006)

BA, Linfield College

MA and PhD, University of California, Berkeley

Bolding, Deborah - *Associate Professor, Occupational Therapy* (1993)

BS, The University of Florida

MS, Boston University

PhD, Capella University

Bolton, Shawna - *Assistant Professor, Justice Studies* (2017)

BA, University of Toronto, Mississauga, ON

MSc, Radford University, Radford, VA

PhD, University of Wolverhampton, United Kingdom

Bogie, Nathaniel - *Assistant Professor, Geology* (2019)

BS, University of California, Santa Cruz

PhD, University of California, Merced

Bogle, Lucus - *Associate Vice President, IT Infrastructure and Operations, Infrastructure Services* (2022)

MA, Saint Mary'S College Of Minnes

Bonakdar, Sara - *Senior Director of Business Services, Business Services* (2016)

BA, University of California, San Diego

MA, University of Nevada, Reno

Bonesteel, Eric - *Associate Director of Silicon Valley Outreach, Alumni and Community Engagement* (2008)

BA, San Jose State University

Bowers, Joanne - *Head Coach, Women's Gymnastics* (2018)

BS, James Madison University

MA, Austin Peay State University

Bowsky, Sonja - *Manager, Distribution and Asset Services* (2014)

NG, Metropolitan State College of Denver

Boyce, Travis D. - *Associate Professor and Chair, African American Studies* (2020)

BA, Claflin University

MA and PhD, Ohio University

Boylan-Ashraf, Peggy - *Assistant Professor, Interdisciplinary Engineering* (2015)

BS, MEng, and PhD, Iowa State University

Brada-Williams, Noelle - *Professor and Chair, English* (1998)

BA, University of California, Berkeley

MA and PhD, University of California, Santa Barbara

Brady, Jacquelyn - *Assistant Professor, Psychology* (2020)

BA, California State University, San Marcos

MS, Washington State University

PhD, Portland State University

Brandt, Kirsten - *Assistant Professor, Film and Theatre* (2019)

BA, University of California, San Diego

MFA, Goddard College

Bremer, Martina - *Professor, Mathematics* (2007)

BS, University of Hanover, Germany

MS and PhD, Purdue University

Brennan, Brent - *Head Coach, Football* (2005)

BA, University of California, Los Angeles

Brent, James - *Professor, Political Science* (1994)

BA, Southern Methodist University

MA and PhD, Ohio State University

Briceño, Allison - *Assistant Professor, Teacher Education* (2015)

BA, University of Pennsylvania

MA, Stanford University

EdD, University of San Francisco

Bridger, Alison - *Professor, Meteorology and Climate Science* (1984)

BS, Sussex University, United Kingdom

MS, Reading University, United Kingdom

PhD, Colorado State University

Brinkman, Daniel - *Assistant Professor, Mathematics* (2016)

BS, University of Minnesota

PhD, University of Cambridge

Broberg, Scott - *Director of Operations and Finance, College of Professional and Global Education* (2017)

BS, Santa Clara University

Brook, David - *Professor, Chemistry* (2006)

BS, University of Lancaster, United Kingdom

PhD, University of Colorado at Boulder

Brooks, Candice - *Assistant Director, Housing Coordination* (2019)

BA, Emporia State University

MS, University of Kansas

Brown, Brigitte - *Research Development Specialist, Research Development* (2022)

MFA, School of Visual Arts

Brown, Corie - *Assistant Professor, Music and Dance* (2019)

BME, Alma College

MA, University of Oregon

DMA, University of Colorado at Boulder

Brown, Étienne - *Assistant Professor, Philosophy* (2019)

BA and MA, University of Ottawa, Canada

PhD, Université Paris-Sorbonne, France

Brown, Karin - *Professor, Philosophy* (2001)

BA, Hunter College, The City University of New York

PhD, The Graduate Center, The City University of New York

Brown, Patrick - *Assistant Professor, Meteorology and Climate Science* (2012)

BS, University of Wisconsin

MS, San Jose State University

PhD, Duke University

Bruce, Emily - *Associate Professor, School of Social Work* (1998)

BS, University of California, Davis

MSW, University of Washington

PhD, University of California, Berkeley

Bryant, Patience - *Director of Black/African American Equity, Office of Diversity* (2020)

PhD, Nova University

Buckner-Capone, Anji - *Assistant Professor, Public Health and Recreation* (2005)

MPH and DED, San Jose State University

Bui, Viet Anh - *Assistant Director for Enterprise, Accounting Services* (2018)

BS, San Jose State University

Bullen, Maria - *Associate Professor, Accounting and Finance* (2014)

PhD, University of California, Los Angeles

Burciaga, Maria Rebeca - *Associate Professor, Chicana and Chicano Studies and Educational Leadership; Interim Chair, Educational Leadership* (2010)

BA, University of California, Santa Cruz

EdM, Harvard Graduate School of Education

PhD, University of California, Los Angeles

Burrill, Gerald - *Executive Managing Director, Hammer Theatre* (2016)

MFA, University of California, Irvine

Busch, Joel - *Associate Professor, Accounting and Finance* (2013)

BS and MS, San Jose State University,

JD, Monterey College of Law

Bushey, Jessica - *Assistant Professor, School of Information* (2022)

BA, MAS, PhD, University of British Columbia

Bustillo, Pamela - *Associate Registrar, Office of the Registrar* (2014)

BS, Santa Clara University

Butler, Stanley - *Associate Professor, Kinesiology* (1989)

BS, Culver-Stockton College

MS, Northwestern State University

PhD, Texas A&M University

Butryn, Theodore - *Professor, Kinesiology* (1997)

BA, University of Tennessee-Knoxville

BS, San Jose State University

PhD, University of Tennessee, Knoxville

Butzlaff, Alice - *Assistant Professor, Nursing* (2016)

PhD, University of California, San Francisco

Buurman, Erica - *Assistant Professor, Music and Dance* (2019)

BM, MM, and PhD, University of Manchester

C

Cabot, Matt - *Associate Professor, Journalism and Mass Communications* (2007)

BA, University of the Pacific

MS, San Jose State University

MA, San Francisco Theological Seminary

PhD, Regent University

Cabrera, Peggy - *Associate Librarian, University Library* (2005)

MA, University of Arizona

Callaghan, Glenn - *Professor, Psychology* (1998)

BA, University of California, Irvine

PhD, University of Nevada, Reno

Campisi, Marion - *Assistant Professor, Mathematics* (2015)

BA, University of California, Santa Cruz

PhD, University of California, Davis

Campsey, Billy - *Professor, Accounting and Finance* (1982)

BA and BBA, University of Texas, Arlington

MBA, University of Houston

PhD, University of Texas, Arlington

Canete, Carolyn - *Annual Giving Manager, Development University Advancement* (2007)

MA, Saint Mary's College of California

Cantos, Immaculate - *Director of Strategic Initiatives, Student Wellness Center* (2021)

MA, San Jose State University

Capdevila, Lucia - *Assistant Professor, Aerospace Engineering* (2017)

BS, MS, and PhD, Purdue University

Capizzi, Lorri - *Assistant Professor, Counselor Education* (2020)

MA, San Jose State University

EdD, San Francisco State University

Capriotti, Matthew - *Associate Professor, Psychology* (2016)

BA and BS, University of Florida

MS and PhD, University of Wisconsin, Milwaukee

Caraves, Jack - *Assistant Professor, Sociology and Interdisciplinary Social Sciences* (2019)

BA, University of California, Santa Cruz

PhD, University of California, Los Angeles

Cargill, Shelley - *Associate Dean, College of Sciences* (2003)

BS, California Polytechnic State University, San Luis Obispo

MS and PhD, University of California, Davis

Carr, Valerie - *Associate Professor, Psychology* (2015)

BS, College of William and Mary

PhD, University of California, Los Angeles

Carroll, Michael - *Chief of Police, University Police* (2022)

MA, Saint Mary's College of California

Carter, Andrew - *Assistant Professor, Public Health and Recreation* (2019)

MA, San Jose State University

MPH and PhD, University of Memphis

Carter, Benjamin - *Associate Professor, Biological Sciences* (2015)

BS, California Polytechnic State University, San Luis Obispo

PhD, University of California, Berkeley

Cascella, Paul - *Professor, Communicative Disorders and Sciences* (2015)

BS, Marquette University

MA, State University of New York, Buffalo

PhD, University of Connecticut

Castillo, Francisco - *Managing Director, Jack Holland Student Success Center* (2011)

BA, University of California, Santa Barbara

MS, California State University, Long Beach

Castillo Vardaro, Jessica - *Assistant Professor, Biological Sciences* (2019)

PhD, Oregon State University

Castruita, Amanda - *Senior Construction Manager, Capital Outlay Project Management* (2022)

BE, California State University, Fullerton

Cava, Gary - *Professor, Child & Adolescent Development* (1999)

BA and MA, San Jose State University

Cayco-Gajic, Maria (Bem) - *Chair and Professor, Mathematics* (1988)

BS, University of the Philippines

MS, University of Connecticut

PhD, Carnegie Mellon University

Celano, Justin - *Police Lieutenant, UPD Administrative Services* (2003)

Ceran, Yasin - *Assistant Professor, Information Systems and Technology* (2022)

MS and Ph.D., University of Texas at Dallas

Chae, Andrew - *Senior Assistant Librarian, University Library* (2020)

MLIS, San Jose State University

Chagolla, Placentina - *Custodial Crew Manager, Custodial* (2006)

Chai, David - *Professor, Design* (2004)

BA and MA, San Jose State University

Chakrabarti, Sukanya - *Associate Professor, Film and Theatre* (2022)

BA, Jadavpur University (Kolkata, India)

MA, Jadavpur University (Kolkata, India)

PhD, Stanford University

Chakarov, Alexandra - *Assistant Professor, Computer Science* (2021)

BA, University of Colorado Boulder

MS and PhD, University of Colorado Boulder

Chan, Emily - *Associate Dean for Research and Scholarship, University Library* (2011)

MLIS, San Jose State University

Chan, Rebecca - *Assistant Professor, Philosophy* (2017)

BA, Boston University

MA and JD, University of Colorado

PhD, University of Notre Dame

Chancellor-Freeland, Cheryl - *Professor, Psychology* (1996)

BA, San Jose State University

PhD, University of California, Santa Barbara

Chang, Lee - *Professor, Applied Data Science* (1986)

PhD, University of Texas, Austin

Chang, Megan - *Associate Professor, Occupational Therapy* (2012)

BS, MA, and PhD, University of Southern California

Chang, Seung Ho - *Assistant Professor, Kinesiology* (2016)

BS and MA, Seoul National University, South Korea

PhD, Ohio State University

Chang, Shih Yu - *Assistant Professor, Applied Data Science* (2018)

PhD, University of Michigan, Ann Harbor

Cheers, Michaels - *Associate Professor, Journalism and Mass Communications* (2006)

PhD, Howard University

Chen, Caroline - *Assistant Professor, Accounting and Finance* (2016)

BS, Rutgers University Business School

JD, American University

LLM in Taxation, Georgetown University Law Center

Chen, Gong - *Professor, Kinesiology* (1990)

BEd, Shenyang Physical Education Institute

MEd, Beijing University of Physical Education

PhD, University of Arkansas, Fayetteville

Chen, Guangliang - *Assistant Professor, Mathematics* (2014)

BS, University of Science and Technology of China

PhD, University of Minnesota

Chen, Hsuanwei - *Associate Professor, School of Information* (2013)

BS and MS, National Taiwan University, China

PhD, University of Texas, Austin

Chen, Susan - *Assistant Professor, Professor, Nutrition, Food Science, and Packaging* (2021)

PhD, MS and BS, Virginia Tech

Chen, Xintong - *Assistant Professor, Political Science* (2021)

MSW, Columbia University in the City of New York

PhD, North Carolina State University

Chen, Yu - *Assistant Professor, Information Systems and Technology* (2018)

BE, Huazhong University of Science and Technology, China

MS, Norwegian University of Science and Technology, Norway

MS, Aalto University, Finland

PhD, Swiss Federal Institute of Technology at Lausanne, Switzerland

Cheng, Cheng - *Senior Assistant, University Library* (2018)

MLIS, State University of New York, Buffalo

Chierichetti, Maria - *Assistant Professor, Aerospace Engineering* (2019)

BS and MS, Politecnico di Milano, Italy

MS and PhD, Georgia Institute of Technology

Chin, Jessica - *Associate Professor, Kinesiology* (2008)

BA, St. Mary's College of Maryland

MA, American University

PhD, University of Maryland

Chin, Yu-mei - *Associate Director of Academic School, Academic Scheduling and Space Management* (2021)

MA, San Francisco State University

Cho, Jang Hyung - *Professor, Accounting and Finance* (2008)

PhD, Florida International University

Choi, Kyoung Mi - *Associate Professor, Counselor Education* (2019)

MA, MS, PhD, Syracuse University

Choo, Chang - *Professor, Electrical Engineering* (1991)

MS and PhD, Rensselaer Polytechnic Institute

Chopra, Ruma - *Interim Director of Special Academic Program, Provost/SVP Academic Affairs* (2008)

BS and MA, Carnegie Mellon University

MA, University at Albany

PhD, University of California, Davis

Chou, Chengkuo - *Director for Planning and Operations, Business Operations* (2017)

MS, University of California, Riverside

Chow, Anthony - *Director and Professor, School of Information* (2021)

BA, San Francisco State University

MS and PhD, Florida State University

Chu, Helen - *Associate Director for Enrollment Image and Archive Operations, Office of the Registrar* (2019)

BS, New Jersey Institute of Technology

Chun, Robert - *Professor, Computer Science* (1995)

BS, MS, PhD, University of California, Los Angeles

Chung, Wenchiang (Richard) - *Professor, Chemical and Materials Engineering* (1987)

PhD, Auburn University

Cisar, Craig - *Professor, Kinesiology* (1986)

BS, University of South Dakota

MS, PhD, University of Nebraska-Lincoln

Clapp, John - *Associate Professor, Design* (1994)

MA, Syracuse University

Clements, Craig - *Professor and Director of the Fire Weather Research Laboratory, Meteorology and Climate Science* (2007)

BS, University of Nevada

MS, University of Utah

PhD, University of Houston

Clark, Robert - *Senior Deputy Director of Athletics, External Athletic Operations* (2020)

BA and MAT, Occidental College

PhD, Texas A&M University

Coe, Joseph - *Assistant Professor, Civil and Environmental Engineering* (2024)

PhD, University of California - Los Angeles

Coelho, Raquel - *Associate Professor, Design* (2009)

MFA, School of Visual Arts

Cohen, Edward - *Interim Associate Dean for Research, College of Health and Human Science* (2007)

MSW and PhD, University of California, Berkeley

Cohen, Fred - *Professor and Chair, Music and Dance* (2014)

BA, University of California, Santa Cruz

MA and PhD, Cornell University

Colbert, Beth - *Associate Vice President, Advancement and Campaign Operations* (2005)

BA and MS, San Jose State University

Coleman, James - *Assistant Professor, English* (2020)

PhD, University of Pennsylvania

Colmenares, Erica - *Assistant Professor, Humanities* (2020)

DED, Columbia University

Cole, Kristen - *Assistant Professor, Communication Studies* (2019)

PhD, University of New Mexico

Collins, Elaine - *Professor, Chemistry* (2011)

BS, MS and PhD, University of California, Riverside

Combs, Howard - *Professor, Marketing and Business Analytics* (1996)

BA and MBA, Virginia Polytechnic Institute and State University

PhD, University of Georgia

Connolly, Thomas - *Associate Professor, Moss Landing Marine Lab* (2015)

BS, Stanford University

MS and PhD, University of Washington

Cook, Jennifer - *Clinic Manager, Health Services* (2022)

MSN, Southern Illinois University Edwardsville

Coopman, Stephanie - *Professor, Communication Studies* (1990)

BS, Western Michigan University

MA, Central Michigan University

PhD, University of Kentucky

Cordero, Eugene C - *Professor, Meteorology and Climate Science* (2002)

BS and MS, California State University, Northridge

PhD, University of California, Davis

Coria, Alfredo - *Investigator, University Personnel* (2018)

BA, Sonoma State University

JD, University of California Hastings of the Law

Coronado, Rosa - *Senior Director of Academic Employee Relations, University Personnel* (2021)

MA, San Jose State University

DED, California State University, East Bay

Correa-Morris, Carole - *Director of Data and Resource Management, University Library* (1990)

BA and BS, San Jose State University

Craig, Richard - *Professor, Journalism and Mass Communications* (2000)

BA, University of California, San Diego

PhD, University of Illinois at Urbana-Champaign

Craighead, Jamie - *Women's Basketball Head Coach, Women's Basketball* (2013)

BA, University of Oregon

Crawford, Michael - *Senior Associate Vice President, Strategic Communications and Marketing* (2021)

BA, Texas A&M University

Cross, Eric - *Parking Manager, Parking Services* (2018)

BS, Austin Peay State University

MPA, University of Phoenix

Crowe, Molly - *Interim Director, College of Engineering* (2021)

Crunk, Steven - *Professor, Mathematics* (2001)

MS, California State University, Northridge

PhD, University of Pennsylvania

Cruz, Marco Antonio - *Director of Data Analytics, Evaluation, and Applied Research, Institutional Effectiveness and Strategic Analytics* (2022)

MA, Santa Clara University

Cuellar, Megan - *Assistant Professor, Communicative Disorders and Sciences* (2020)

PhD, Tennessee State University

Currin-Percival, Mary - *Associate Professor, Political Science* (2012)

PhD, University of California, Riverside

Curry-Rodriguez, Julia - *Professor, Chicana and Chicano Studies* (2000)

BA, University of California, Santa Barbara

MA and PhD, University of Texas, Austin

Cushing, Katherine - *Professor, Environmental Studies* (2003)

BS, Northwestern University

MS and PhD, Stanford University

Czerwinski, David - *Professor, Marketing and Business Analytics* (2008)

BS, Stanford University

PhD, Massachusetts Institute of Technology

D

D'Alarcao, Marc - *Dean, College of Graduate Studies* (2007)

BS, Bridgewater State College

PhD, University of Illinois at Urbana-Champaign

D'Andrade, Amy - *Professor, School of Social Work* (2003)

MA and PhD, University of California, Berkeley

Da Silva, Nancy - *Professor and Director, School of Management* (2000)

BS, University of Toronto, Canada

MA and PhD, University of Houston

Daley, Eileen - *Deputy Director of Internal Operations/Senior Woman Administrator, Student-Athlete Academic Services* (2005)

BA, Sonoma State University

MA, John F. Kennedy University

Danh, Binh - *Assistant Professor, Art and Art History* (2006)

MFA, Stanford University

Daniels, Sonja - *Associate Vice President, Campus Life* (2016)

AA, Tyler Junior College

BBA, Texas Christian University

MA, New York University

DED, University of Southern California

Danzig, Arnold - *Professor and Director, Educational Leadership* (2013)

MA and PhD, University of Maryland

Dao, Michael - *Assistant Professor, Kinesiology* (2019)

BS and MA, San Jose State University

PhD, University of Toronto, Canada

Darrah, Chuck - *Professor, Anthropology* (1979)

PhD, Stanford University

Daum, David - *Assistant Professor, Kinesiology* (2015)

BA and MA, California State University, Chico

PhD, University of Illinois at Urbana-Champaign

Davalos, Michelle - *Director of Resources and Operations, College of Engineering* (2021)

BS, San Francisco State University

Davis, Theresa - *Vice President, University Advancement* (2020)

MA, University of Southern California

Davoudi Kakhki, Fatemeh - *Assistant Professor, Technology* (2018)

PhD, Iowa State University

Dawkins, Denise - *Assistant Professor, Nursing* (2019)

BS, City University of New York, Hunter College

MS, California State University, Bakersfield

DNP, California State University, Northern California Consortium

Day, Patrick - *Vice President, Student Affairs* (2018)

MED, Texas Tech University

de Bourbon, Soma - *Assistant Professor, Sociology and Interdisciplinary Social Sciences* (2013)

BA, University of California, Berkeley

PhD, University of California, Santa Cruz

De Giorgi, Alessandro - *Professor and Program Coordinator, Justice Studies* (2007)

PhD, Keele University, United Kingdom

Delacruz, John - *Associate Director and Associate Professor, Journalism and Mass Communications* (2012)

BA, Humberside Polytechnic

MA, Manchester Metropolitan University

Del Casino, Vincent - *Provost and Senior Vice President, Academic Affairs* (2019)

BA, Bucknell University

MS, University of Wisconsin, Madison

PhD, University of Kentucky

Derringer, Catherine - *Senior Director of Development, Davidson College of Engineering, Development Unit Advancement* (2022)

MA, San Jose State University

Desalvo, Jean-Luc - *Professor, World Languages and Literatures* (1995)

PhD, University of Virginia

Dessouky, Yasser - *Professor and Chair, Industrial and Systems Engineering* (1997)

BS, University of Wisconsin, Madison

MS and PhD, Arizona State University

DeVries, Maya - *Assistant Professor, Biological Sciences* (2020)

PhD, University of California, Berkeley

Deyo, Darwynn - *Assistant Professor, Economics* (2017)

BS, Saint Mary's College of California

MA and PhD, George Mason University

Dhar, Subhankar - *Professor, Information Systems and Technology* (2001)

PhD, University of South Florida

Diallo, Ismaila - *Assistant Professor, Meteorology and Climate Science* (2024)

PhD, Université Cheikh Anta Diop de Dakar (UCAD)

Diao, Minghui - *Associate Professor, Meteorology and Climate Science* (2015)

BS, Peking University, China

PhD, Princeton University

Diaz, Ella Maria - *Professor and Chair, Department of Chicana and Chicano Studies* (2022)

BA, UC Santa Cruz, MA and PhD College of William and Mary

Dillon, Jason - *Interim Associate Vice President for IT Infrastructure and Operations, Infrastructure Services* (2020)

CER, Other US Institution

Diridon, Sabra - *Executive Director of Development, Development University Advancement* (2011)

MPA, San Jose State University

Dirlam, Philip - *Assistant Professor, Chemistry* (2019)

MS, California Polytechnic State University, San Luis Obispo

PhD, University of Arizona

Diwan, Sadhna - *Professor, School of Social Work* (2005)

BA, University of Bombay, India

MS and PhD, Case Western Reserve University

Dizack, Anna - *Research Development Specialist, Research Development* (2022)

MA, University of Iowa

Do, Julie - *Director of Accounting Services, Accounting Services* (2021)

BA, Michigan State University

Do, Hien - *Professor, Sociology and Interdisciplinary Social Sciences and Coordinator, Asian American Studies Program* (1992)

PhD, University of California, Santa Barbara

Donahue, Kathleen - *Manager of Academic Program and Research Operations, Moss Landing Marine Lab* (2015)

BA, University of California, Santa Cruz

MED, Chapman University

Dougan, Marcelle - *Assistant Professor and Undergraduate Program Coordinator, Public Health and Recreation* (2015)

MS, Imperial College of Science

MPH, Columbia University

PhD, Harvard University

Douglas, Gordon - *Assistant Professor and Director of The Institute of Metropolitan Studies, Urban and Regional Planning* (2016)

BA and MA, University of Southern California

MSc, London School of Economics and Political Science, United Kingdom

PhD, University of Chicago

Drabble, Laurie - *Faculty, College of Health and Human Sciences (2001)*

MSW, California State University, Long Beach

MPH and PhD, University of California, Berkeley

Drury, Robert - *Senior Director for Resource Management (1999)*

BA, California State University, Sacramento

MPA, San Jose State University

Du, Winncy - *Professor, Mechanical Engineering (2000)*

BS, Jilin University, China

MS, West Virginia University

MS and PhD, Georgia Institute of Technology

Dubus, Nicole - *Associate Professor, School of Social Work (2015)*

BA, University of California, Santa Cruz

MSW, San Francisco State University

PhD, Boston University

Duckor, Brent - *Professor, Teacher Education (2008)*

BA, University of California, Santa Cruz

MA, Columbia University

MA and PhD, University of California, Berkeley

DuCros, Faustina - *Associate Professor, Sociology and Interdisciplinary Social Sciences (2014)*

BA, California State University, Long Beach

MA and PhD, University of California, Los Angeles

Dudley, Danijela - *Assistant Professor, Political Science (2012)*

PhD, University of California, Riverside

Dudley, Nancy - *Associate Professor, Nursing (2019)*

PhD, University of California, San Francisco

Duh, Shinchieh - *Associate Professor, Psychology (2014)*

BS, University of California, Los Angeles

MA, San Francisco State University

PhD, University of California, Santa Cruz

Dunn, Wendy - *Director of Operations and Administrative Services, University Library* (2005)

BS, Miami University, Oxford

MA, San Jose State University

E

Easter, Marilyn - *Professor, Marketing and Business Analytics* (2000)

BA, University of Colorado at Boulder

MSW and MA, Denver University

EdD, University of San Francisco

Eastwood, Adrienne - *Professor, English* (2005)

MA, San Diego State University

BA and PhD, University of California, San Diego

Ede, Kristin - *Senior Director of Enrollment Marketing, Strategic Communication and Marketing* (2022)

MA, Boston University

Edwards, Michael - *Emergency Services Manager, University Police* (2020)

MA, University of Redlands

Ehrman, Sheryl - *Dean, College of Engineering* (2017)

BS, University of California, Santa Barbara

PhD, University of California, Los Angeles

Eirinaki, Magdalini - *Professor and Associate Chair, Computer Engineering* (2007)

BSc, University of Piraeus, Greece

MSc, Imperial College, United Kingdom

PhD, Athens University of Economics and Business, Greece

Elsibai, Stacey - *Manager for Employee and Labor Relations, University Personnel* (2015)

BA, University of Hawaii at Manoa

Emmert, David - *Counselor II, Counseling and Psychological Services* (2007)

PhD, Alliant International University

Ensminger, David - *Assistant Professor, Biological Sciences* (2021)

BS, University of California, Santa Cruz

MS, Sonoma State University

PhD, Penn State University

Erdogan, Ayca - *Associate Professor, Industrial and Systems Engineering* (2014)

BS, Istanbul Technical University, Turkey

PhD, North Carolina State University

Erogbogbo, Folarin - *Associate Professor, Biomedical Engineering* (2013)

PhD, State University of New York, Buffalo

Escoto Reyes, Monica - *Assistant Director of Customer Operations, Housing Building Maintenance* (2000)

BS, San Jose State University

Esker, Nicholas - *Assistant Professor, Chemistry* (2019)

BA, Florida Atlantic University

PhD, University of California, Berkeley

Estrada Christina - *Head Women's Soccer Coach, Women's Soccer* (2018)

MS, Depaul University

Estrada, Ignacio - *Custodial Crew Manager, Custodial* (2010)

Etu, Egbe-Etu - *Assistant Professor, Marketing & Business Analytics* (2021)

BEng, Covenant University, Nigeria

PhD and MS, Wayne State University

Ezunkpe, Yawo - *Assistant Professor, Aerospace Engineering* (2021)

BS, San Jose State University

MS and PhD, University of California, San Diego

F

Faas, A.J. - *Associate Professor and Graduate Coordinator, Anthropology* (2014)

PhD, University of South Florida

Faas, Charles - *Vice President, Administration and Finance/Chief Financial Officer* (2016)

BBA, Siena College

MBA, University of California, Los Angeles

Fadiman, Jeffrey - *Professor, Marketing and Business Analytics* (1983)

PhD, University of Wisconsin, Madison

Falter, Benjamin - *Senior Student Affairs Case Manager, Student Wellness Center* (2015)

BS, Saint Vincent College

MA, Indiana University of Pennsylvania

Fang, Chiao-Ju - *Assistant Professor, Occupational Therapy* (2018)

BS, National Taiwan University, China

MA and PhD, New York University

Fassett, Deanna - *Assistant Vice Provost for Faculty Development, Center for Faculty Development* (2000)

BA, University of California, San Diego

MS and PhD, Southern Illinois University, Carbondale

Fatoohi, Rod - *Professor and Chair, Computer Engineering* (1996)

MS, Syracuse University

PhD, Old Dominion University

Faulkner, Matthew - *Assistant Professor, Accounting and Finance* (2019)

PhD, Florida Atlantic University

Fayad, Mohamed - *Professor, Computer Engineering* (2002)

BS, Cairo University, Egypt

MS and PhD, University of Minnesota, Twin Cities

Feist, Gregory - *Professor, Psychology* (2006)

BA, University of Massachusetts, Amherst

PhD, University of California, Berkeley

Felton, Mark - *Professor, Teacher Education* (1999)

BA, Stanford University

PhD, Columbia University

Feng, Xi - *Assistant Professor, Nutrition, Food Science and Packaging* (2018)

PhD, Iowa State University

Ferdolage, Traci - *Senior Associate Vice President, Facilities Development and Operations* (2020)

MBA, Humboldt State University

Feria, Cary - *Associate Professor, Psychology* (2008)

BA, University of California, Santa Barbara

MA and PhD, University of California, Irvine

Ferguson, Jason - *IT Support Manager, Desktop Support* (1996)

BA and BS, San Jose State University

Fernández, Vanessa - *Assistant Professor, World Languages and Literatures* (2016)

BA, Princeton University

MEd, Columbia University

MA and PhD, University of California, Los Angeles

Ferris, Braley - *Director of Donor Relations and Stewardship, Advancement and Campaign Operations* (2018)

BA, University of Michigan, Ann Arbor

Fisher, Dianne - *Interim Associate Vice President, Alumni and Community Engagement* (2021)

MA, Drake University

Fisher, Michael - *Assistant Professor, African American Studies* (2020)

BS and M.Div, Howard University

MA and PhD, Vanderbilt University

Fletcher, Shaun - *Assistant Professor, Journalism and Mass Communications* (2018)

BS, San Jose State University

MA, University of Central Florida

PhD, Howard University

Fonseka, Ruvani - *Assistant Professor, School of Social Work* (2021)

MSW, University of California, Berkeley

PhD, University of California, San Diego

Fouad, Ashraf - *Senior Director for Plan Design and Construction, Facilities Planning* (2016)

MA, University of California, Berkeley

Francisco, Richard - *Counselor III, Counseling and Psychological Services* (1997)

PhD, University of Oregon

Franks, Patricia - *Professor, School of Information* (2009)

BS, Bloomsburg University

MASS, Binghamton University

PhD, Capella University

Frazier, Stefan - *Professor, Linguistics and Language Development* (2005)

BA, Trinity University

MA, San Francisco State University

PhD, University of California, Los Angeles

Freedman, Marjorie - *Professor, Nutrition, Food Science and Packaging* (2005)

PhD, University of California, Davis

French, Rachael - *Chair and Professor, Biological Sciences* (2010)

BS, University of California, Davis

PhD, University of Washington

Freund, Louis - *Professor, College of Engineering* (2017)

Frey, Shirley - *Senior Director of Creative Strategy, Strategic Communications and Marketing* (2011)

BS, California Polytechnic State University, San Luis Obispo

MFA, L'Ecole des Beaux-Arts, France

Friedman-Biglin, Noah - *Assistant Professor, Philosophy* (2015)

BA, Saint Mary's College of California

PhD, University of St Andrews and the University of Stirling, United Kingdom

Froehlich, Alexandra - *Director, Student Conduct and Ethical Development* (2017)

BA, Loyola Marymount University

MA, University of the Pacific

Fryer, Dashiell - *Assistant Professor, Mathematics* (2015)

BS and BA, San Jose State University

PhD, University of Illinois at Urbana-Champaign

Fujimoto, Kell - *Senior Director of Well-being, Counseling and Psychological Services* (2002)

BA and MED, University of Hawaii at Manoa

DBA, University of California, Irvine

PhD, Argosy University, Honolulu

Furman, Burford - *Professor, Mechanical Engineering* (1994)

BS and MS, University of California, Davis

PhD, Stanford University

Furman, Pablo - *Professor and Coordinator, Music and Dance* (1989)

PhD, University of California, Los Angeles

Fusaro, Maria - *Associate Professor, Child and Adolescent Development* (2012)

Med and PhD, Harvard University

G

Gabet, Manny - *Professor, Geology* (2007)

PhD, University of California, Santa Barbara

Gaglia, Patricia (Sela) - *Executive Director for Corporations and Foundation Relations, Development University Advancement* (2015)

BA and MFA, San Diego State University

Gamblin, Kim - *Associate Director for Procurement Payments, Finance and Business Services* (2012)

AA, West Valley College

BA, University of California, Santa Cruz

Gao, Ge - *Professor, Communication Studies* (1990)

PhD, Arizona State University

Gao, Jerry - *Professor, Computer Engineering* (1997)

BS, Nanjing University, China

BS, Hohai University, China

MS and PhD, University of Texas, Arlington

Gao, Jie - *Assistant Professor, Hospitality, Tourism and Event Management* (2019)

PhD, Pennsylvania State University

Garcia, Alberto - *Assistant Professor, History* (2017)

BA, University of California, Davis

MA, Stanford University

MA and PhD, University of California, Berkeley

Garcia, Alejandro - *Professor and Project Director of the Physics Foundation, Physics and Astronomy* (1989)

PhD, University of Texas, Austin

Garcia, Carlos - *Professor, Sociology and Interdisciplinary Social Sciences* (2006)

PhD, University of Oklahoma, Norman

Garcia, Moctezuma - *Assistant Professor, School of Social Work* (2020)

MSW, Columbia University

PhD, City University of New York

Garcia, Pedro - *Manager for Recruit and Retention, University Personnel* (2001)

BS, San Jose State University

Garcia, Tony - *Interim Manager, Recruitment and Retention* (2001)

BS, San Jose State University

Gardner, Bruce - *IT Support Manager, College Support* (2002)

BA, San Jose State University

Garduno, Cynthia - *Interim Manager, Records and Administrative Projects, University Personnel* (2016)

BA and MBA, San Jose State University

MA, University of San Francisco

Garud Patkar, Nisha - *Assistant Professor, Journalism and Mass Communications* (2018)

PhD, Ohio University

Gaudinski, Julia - *Director of Research Development, Office of Research* (2019)

BS, University of California, Santa Cruz

PhD, University of California, Irvine

Gavino, Monica - *Associate Professor, School of Management* (2016)

PhD, University of Chicago

Gehrt, Kenneth - *Professor, Marketing and Business Analytics* (2002)

PhD, University of Kentucky

Gendzel, Glen - *Professor and Chair, History* (2005)

BA, University of California, Berkeley

MA and PhD, University of Wisconsin, Madison

Geneson, Jesse - *Assistant Professor, Mathematics* (2020)

PhD, Massachusetts Institute of Technology

Geraci, Steve - *Manager, Academic Resources, College of Science* (2002)

BA, California State University, Chico

Gerrick, Alexandria - *Counselor I, Counseling and Psychological Services* (2013)

PhD, Chicago School of Professional Psychology

Gerston, Larry - *Professor, Political Science* (2010)

Ghatak, Sambuddha - *Assistant Professor, Justice Studies* (2017)

MA Appalachian State University, Boone, NC

PhD, University of Tennessee

Ghosh, Souvick - *Assistant Professor, School of Information* (2020)

PhD, Rutgers University, Camden

Gibson, Katrice - *Assistant Director, Graduation Admissions and Program Evaluation* (2016)

BS, San Jose Christian College

MA, Brandman University

Gieng, John - *Assistant Professor, Nutrition, Food Science and Packaging* (2017)

BS, University of California, Berkeley

PhD, Pennsylvania State University

Giron, Daan - *Senior Director of Development for College of Social Sciences, Development University Advancement* (2011)

BA, San Jose State University

Glazer, Amy - *Professor, Film and Theatre* (1991)

BFA, Eckerd College

MFA, California School of the Arts

Gliner, Robert - *Professor, Sociology and Interdisciplinary Social Sciences* (2008)

PhD, University Of Minnesota Twin Cities

Gold, Clifton - *Associate Creative Director, Special Events* (2020)

Goldston, Daniel - *Professor, Mathematics* (1983)

PhD, University of California, Berkeley

Golloher, Andrea - *Associate Professor, Special Education* (2013)

BA, Washington University, Saint Louis

Med, Vanderbilt University

PhD, University of California, Berkeley and San Francisco State University

Gomez, Jonathan - *Assistant Professor, Chicana and Chicano Studies* (2018)

BA, University of California, Santa Cruz

BA and PhD, University of California, Santa Barbara

Gomez, Luis Felipe - *Associate Professor, Communication Studies* (2012)

BA, Tecnológico de Monterrey, Mexico

MA, Katholieke Universiteit Leuven, Belgium

PhD, University of Texas, Austin

Gomez, Vicky - *Assistant Professor, Public Health and Recreation* (2018)

DrPH, University of California, Berkeley

Gonzales, Deanna - *Director, Undergraduate Admissions and Outreach* (1989)

AA, De Anza College

BA, San Jose State University

Gonzales, Valerie - *Interim Director for Alumni Engagement, Alumni and Community Engagement* (2002)

BA and MA, San Jose State University

Gonzalez, Roberto - *Professor and Chair, Anthropology* (2001)

PhD, University of California, Berkeley

Gonzalez, Selena - *Campus Survivor Advocate, Counseling and Psychological Services* (2021)

BA, University of California, Santa Barbara

MA, University of California, San Francisco

Gorman-DaRif, Meghan - *Assistant Professor, English* (2019)

PhD, University of Texas, Austin

Gorman, Mike - *Associate Professor, School of Social Work* (1999)

MPH and MSW, University of California, Berkeley

PhD, University of Chicago

Goshev, Roman - *Digital Production/Project Manager, Strategic Communications and Marketing* (2020)

Gosart, Ulia - *Assistant Professor, School of Information* (2022)

BA, Kiev State University, Ukraine

MS, Southern Connecticut University

PhD, University of California, Los Angeles

Goward, Shonda - *Associate Vice Provost, Undergraduate Advising and Success* (2021)

EdD, The George Washington University

Gottlieb, Andrea - *Associate Professor, Mathematics* (2012)

PhD, University of California, Davis

Grace, Elizabeth - *Professor and Chair, Accounting and Finance* (1986)

PhD, University of Pennsylvania

Graham, Michael - *Professor, Moss Landing Marine Lab* (2003)

BA, University of California, Santa Barbara

MS, San Jose State University

PhD, University of California, San Diego

Grand, Maxime - *Assistant Professor, Moss Landing Marine Lab* (2018)

BS, University of Hawaii at Manoa

MS, University of Plymouth, United Kingdom

PhD, University of Hawaii at Manoa

Grazioli, Gianmarc - *Assistant Professor, Chemistry* (2020)

BA, BS and MS, Villanova University

PhD, University of California, Irvine

Green, Tonja - *Program Director, College of Science* (2008)

MA, San Jose State University

Greet, Erika - *Assistant Director, Ceremonies and Events* (2019)

Gregg, Jennifer - *Professor, Psychology* (2004)

PhD, University of Nevada-Reno

Gridley, Timothy - *Director for Maintenance and Information, Maintenance and Operations* (2013)

Grillo-Hill, Bree - *Assistant Professor, Biological Sciences* (2016)

BA, Occidental College

PhD, Washington University, Saint Louis

Guel, Carolyn - *Associate Director of Financial Aid Counseling, Financial Aid and Scholarships* (2000)

BA, San Jose State University

MA, John F. Kennedy University

Gunderson, Hilary - *Director of Constituent and Community Success, Alumni and Community Engagement* (2020)

BS and MBA, Oregon State University

Gunner, Staci - *Interim Director, Student Conduct and Ethical Development* (2008)

MA, Ball State University

Guzun, Gheorgi - *Assistant Professor, Computer Engineering* (2017)

BS, Technical University of Moldova, Moldova

PhD, University of Iowa

H

Ha, Jooyeon - *Associate Professor, Hospitality, Tourism and Event Management* (2014)

PhD, Purdue University

Haffey, Carlyn - *Director Donor Relations and Stewardship, Advancement & Campaign Operations* (2021)

BA, University of Michigan, Ann Arbor

Haidari, Daud - *Construction Manager, M&O Project Management* (2022)

BS, San Jose State University

Haight, Colleen - *Professor, Economics* (2006)

BA, University of California, Los Angeles

MBA, Notre Dame de Namur University

PhD, George Mason University

Hajikhameneh, Aidin - *Assistant Professor, Economics* (2018)

BS and MS, University of Tehran, Iran

PhD, Simon Fraser University, Canada

Halualani, Rona - *Professor, Communication Studies* (1998)

BA, University of California, Davis

MA, Sacramento State University

PhD, Arizona State University

Halushka, John - *Assistant Professor, Justice Studies* (2017)

BA, University of California, Berkeley

PhD, New York University

Hambaba, Mohamed - *Professor, Interdisciplinary Engineering* (1996)

PhD, Stevens Institute of Technology

Hambrook, Kyle - *Assistant Professor, Mathematics* (2018)

BS, University of Lethbridge, Canada

MS and PhD, University of British Columbia, Canada

Hamedi-Hagh, Sotoudeh - Professor, Electrical Engineering (2005)

PhD, University of Toronto, Canada

Hamilton, Scott - *Professor, Moss Landing Marine Lab* (2011)

BA, Princeton University

PhD, University of California, Santa Barbara

Han, Crystal - *Assistant Professor, Mechanical Engineering* (2018)

PhD, Stanford University

Han, Meekyung - *Professor and Co-Chair of Institute for Community-Partnered Research, School of Social Work* (2004)

MSW, Washington University, Saint Louis

PhD, University of California, Berkeley

Han, Yoon Chung - Assistant Professor, Design (2018)

MFA, University of California, Los Angeles

PhD, University of California, Santa Barbara

Hancock, Mark - *Lead Custodial Crew Manager, MLK Library Facility* (2004)

Hanson, Lauren - *Head Coach, Women's Soccer* (2014)

BA, University of Portland

Haramaki, Gordon - *Associate Professor and Graduate Coordinator, Music and Dance* (2006)

BA, MA, and PhD, University of California, Los Angeles

Harbrecht, Tiffany - *Assistant Director of Editorial Content, Strategic Communications and Marketing* (2021)

BA, California State University, Monterey Bay

MA, San Jose State University

Hardin, John - *Assistant Bursar, Bursar's Office* (2012)

BA, San Jose State University

Harlan, Mary Ann - *Assistant Professor, School of Information* (2015)

BA, University of California, Santa Cruz

MLIS, San Jose State University

PhD, Queensland University of Technology, Australia

Harper, Jennifer - *Title IX Investigator, Title IX* (2017)

BA, American University

MA, San Diego State University

Harrington, Solomon - *Associate Director, Custodial, Grounds, and Moving Services* (2021)

Harris, Katherine - *Professor, English* (2005)

BA, California State University, Los Angeles

MA, New York University

PhD, City University of New York

Harrison, Victoria - *Professor, History* (2021)

PhD, Rutgers University

Hart, Jillana - *Interim Associate Director, Enrollment Services Technical Implementation & Communication* (1994)

Hart, Tabitha - *Associate Professor, Communication Studies* (2012)

BA, University of California, San Diego

MA, Sacramento State University

PhD, University of Washington

Hartle, Jennifer - *Assistant Professor, Public Health and Recreation* (2016)

BA, University of California, Berkeley

MS and PhD, Johns Hopkins Bloomberg School of Public Health

Hatton, Oona - *Associate Professor, Communication Studies* (2013)

PhD, Northwestern University

Haverfield, Marie - *Assistant Professor, Communication Studies* (2019)

PhD, Rutgers University, New Brunswick

He, Daoping - *Professor, Accounting and Finance* (2006)

PhD, University of Hawaii at Manoa

He, Lili - *Professor, Electrical Engineering* (1998)

PhD, State University of New York, Buffalo

Headrick, Lucille - *Assistant Professor, School of Management* (2021)

BS, Saint Louis University

PhD and MS, University Of Illinois Urbana-Champaign

Headstone, Savana - *Assistant Director of Residential Life, Housing Coordination* (2022)

BS, California State University, Fullerton

Heiden, Lynda - *Professor, Psychology* (1990)

MS, San Jose State University

PhD, West Virginia University

Heimstead, Jennifer - *Assistant Athletic Director Compliance, Athletics* (2007)

BA, California State University, Humboldt

Heindl, Ranko - *Associate Professor, Physics and Astronomy* (2012)

PhD, University of South Florida

Heller, Philip - *Assistant Professor, Computer Science* (2016)

BS, University of California, Berkeley

MS, San Jose State University

PhD, University of California, Santa Cruz

Hendrick, Timothy - *Associate Professor, Journalism and Mass Communications* (2003)

MA, Brigham Young University

Hicks, Deborah - *Assistant Professor, School of Information* (2018)

BA, University of King's College, Canada

MA, York University, Canada

MLIS, Dalhousie University, Canada

PhD, University of Alberta, Canada

Higgins, Silke - *Associate Librarian, University Library* (2011)

MLIS, San Jose State University

Hilde, Libra - *Professor, History* (2005)

BA, University of California, Berkeley

MA and PhD Harvard University

Hill, Henderson - *Director, Student Involvement* (2017)

BA, Tennessee State University

MA, University of Missouri, Kansas City

Hill, Timothy - *Professor, Information Systems and Technology* (1998)

BS and MSE, Purdue University

MBA and PhD, Indiana University, Bloomington

Hillman, Pamela - *Consultant, Development Unit Advancement* (2021)

MS, California Lutheran University

Hirsh, Sandra - *Associate Dean for Academics, College of Professional and Global Education* (2010)

BA and PhD, University of California, Los Angeles

MILS, University of Michigan, Ann Arbor

Yip, Olivia - *Assistant Professor, Civil and Environmental Engineering* (2020)

PhD, University of California, Berkeley

Hobbs, G. Craig - *Associate Professor, Art and Art History* (2012)

BFA, California Institute of the Arts

MFA, University of California, Santa Cruz

Hobbs-Helmus, Bethany - *Senior Associate Athletics Director, Athletic Business Office* (2022)

MA, University of California, East Bay

Hodges, James - *Assistant Professor, School of Information* (2022)

BS and MS New York University

PhD, Rutgers University

Hofman, Darra - *Assistant Professor, School of Information* (2020)

PhD, University of British Columbia iSchool

Holberton, Rhonda - *Assistant Professor, Art and Art History* (2017)

BFA, California College of the Arts

MFA, Stanford University

Holian, Matthew - *Professor and Chair, Economics* (2008)

PhD, Ohio State University, Lima

Hollander, Daniel - *Industry Research Alliances Specialist, Office of Innovation* (2022)

MS, Foreign Institution

Hollinger, Diana - *Professor, Music and Dance* (2003)

MM, University of North Texas

DMA, Arizona State University

Hom, Margaret - *Associate Director for Facilities Operations, Housing Building Maintenance* (1979)

AA, City College of San Francisco

BA, San Jose State University

Honda, Jeffrey - *Associate Dean for Graduate Studies, College of Graduate Studies* (2014)

BS, San Jose State University

MS and PhD, University of California, Riverside

Hopkins, Sage - *Head Coach Swimming and Diving, Women's Swimming* (2005)

Hosoda, Megumi - *Professor, Psychology* (1998)

PhD, State University of New York, Albany

Hou, Xiaojia - *Associate Professor, History* (2015)

BA and MA, Peking University, China

PhD, Cornell University

Howard, Grace - *Assistant Professor, Justice Studies* (2019)

PhD, Rutgers University, Camden

Hsu, Ping - *Professor, Electrical Engineering and Director, Interdisciplinary Engineering Program* (1990)

PhD, University of California, Berkeley

Hsu, Funie - *Assistant Professor, Humanities* (2015)

BA, University of California, Davis

MEd, Harvard University

PhD, University of California Berkeley

Hsu, Timothy - *Professor, Mathematics* (2001)

PhD, Princeton University

Hu, Xiaolu - *Professor, Counselor Education* (1990)

PhD, Kent State University

Huang, Gaojian - *Assistant Professor, Industrial and System Engineering* (2021)

MS, Indiana University Bloomington

PhD and MS, Purdue University

Huang, Yinghua - *Associate Professor, Hospitality, Tourism and Event Management* (2012)

BBA and MS, Xiamen University, China

PhD, Oklahoma State University

Huerta Espinosa, Esperanza - *Professor, Accounting and Finance* (2014)

PhD, Claremont Graduate University

Hughes-Mathews, Jaymes (Alec) - *Interim Associate Director, Student Conduct and Ethical Development* (2021)

MED, Florida State University

Hughes, Peg - *Professor, Special Education* (1999)

PhD, University of California, Los Angeles

Huntsman, Laree - *Professor, Psychology* (1986)

BA and MA, San Jose State University

PhD, University of Wisconsin, Milwaukee

Hupke, Douglas - *Senior Director, Annual Giving, Development University Advancement* (2022)

MA, San Francisco State University

Hurst, Hilary - *Assistant Professor, Physics and Astronomy* (2020)

PhD, University of Maryland

Hutton, Mirabai - *Associate Director, Student Conduct & Ethical Development* (2021)

MA, School for International Training

Huynh, Frank - *Assistant Professor, Biological Sciences* (2018)

PhD, University of British Columbia, Canada

Huynh, Hien - *Information Security Officer, Information Security* (2014)

BA, Simon's Rock College of Bard

MS and MBA, University of Maryland University College

San Fratello, Virginia - *Professor and Chair, Design & Art & Art History* (2010)

March, Columbia University in the City of New York

I

Inaba, Seiichiro - *Professor, World Languages and Literatures* (1998)

PhD, University of Hawaii at Manoa

Ishigakhi, Genya - *Assistant Professor, Mathematics* (2021)

BS and MS, Soka University

PhD, University of Texas at Dallas

Issa, Tahir Bachar - *Assistant Professor, Mathematics* (2021)

MS, Gaston Berger University, Senegal

MS, African University of Science and Technology, Abuja, Nigeria

MS and PhD, Auburn University

Ivanov, Stoyu - *Professor, Accounting and Finance* (2009)

PhD, University of Nebraska-Lincoln

Iwasaki, Yoshitaka - Professor and Chair, Public Health and Recreation (2018)

PhD, University of Waterloo, Canada

Izenstark, Dina - *Assistant Professor, Child and Adolescent Development* (2017)

BS, MS, and PhD, University of Illinois at Urbana-Champaign

J

Jackson, Melinda - *Associate Dean, Undergraduate Studies* (2005)

BA, Simon's Rock College of Bard

PhD, University of Minnesota, Twin Cities

Jadhav, Shrikant - *Associate Professor, Electrical Engineering* (2021)

BE, Savitribai Phule Pune University, India

MS, Bharati Vidyapeeth Deemed University, India

PhD, North Carolina Agricultural and Technical State University

Jeffries, Micah - *Interim Director User Experience, University Library* (2014)

BA and MLIS, San Jose State University

Jahanbekam, Sogol - *Assistant Professor, Mathematics* (2018)

BA, Shiraz University, Iran

MS, Sharif University of Technology, Iran

PhD, University of Illinois at Urbana-Champaign

Janes, Michael - *Director, Executive Communications for Strategic Communications and Marketing* (2018)

BA, Western Washington University

MA, Seton Hall University

Jarvie, Scott - *Assistant Professor, English* (2020)

PhD, Michigan State University

Jaynes, Susan - *Senior Director, Budget Planning and Financial Management* (2016)

BS, Indiana University, Bloomington

Jensen, Areum - *Assistant Professor, Kinesiology* (2016)

BS, Sangmyung University, South Korea

MS, San Francisco State University

PhD, University of Missouri

Jensen, Scott - *Associate Professor, Information Systems and Technology* (2013)

PhD, Indiana University, Bloomington

Jetcheva, Jorjeta - *Assistant Professor, Computer Engineering* (2020)

BA, Mount Holyoke College

PhS, Carnegie Mellon University

Jeyachandran, Indumathi - *Assistant Professor, Civil and Environ Engineering* (2015)

PhD, University of Utah

Jiang, Lin - *Assistant Professor, Mechanical Engineering* (2021)

MS and BS, Nanjing University of Aeronautics and Astronautics, China

PhD, University of Texas at Dallas

Jimenez, Julie - *Director of Financial and Administrative Services, University Advancement* (1984)

AA, Evergreen Valley College

Jin, Li - *Assistant Professor, Kinesiology* (2019)

BS, Shanghai University of Sport, China

MS and PhD, University of Oregon

Johnson, Allison - *Assistant Professor, English* (2018)

PhD, University of California, Los Angeles

Johnson, Colleen - *Counselor II, Counseling and Psychological Services* (2012)

PhD, University of North Dakota

Marie, Tiffani - *Assistant Professor, Teacher Education* (2021)

PhD, University of California, Berkeley

Johnston, Jennifer - *Assistant Professor, Biological Sciences* (2017)

MS, Southern Illinois University

PhD, Emory University

Johnston, Vanetia - *Administrative Analyst, College of Social Sciences* (2021)

Jordan, Ryan - *Assistant Athletics Director for Compliance* (2018)

JD, Marquette University Law School

BA, University of Wisconsin, La Crosse

Jordan, Valin - *Associate Director for Teaching and Learning, Center for Faculty Development* (2020)

DED, George Washington University

Journey, Patrick - *Assistant Professor, Biomedical Engineering* (2019)

BS, University of Portland

MS and PhD, University of Texas, Austin

K

Kahn, Amanda - *Assistant Professor, Moss Landing Marine Lab* (2019)

BS, California State University, East Bay

MS, California State University, Monterey Bay

PhD, University of Alberta, Canada

Kao, Katy - *Professor, Chemical and Materials Engineering* (2019)

PhD, University of California, Los Angeles

Kari, James - *Senior Director, Maintenance and Operations* (2022)

BA, University of California, Sacramento

Karimianbahnemiri, Nima - *Assistant Professor, Computer Engineering* (2018)

MS and PhD, University of Connecticut

Karp, Fernanda - *Interim Director of Chicana and Latinx Equity, Office of Diversity* (2002)

BA, San Jose State University

Kassab, Lara - *Assistant Professor, Teacher Education* (2010)

BA, Holy Names University

MA California State University, Fullerton

EdD, University of San Francisco

PhD, Johns Hopkins University

Kaye, Melissa - *Assistant Professor, Occupational Therapy* (2014)

MS, San Jose State University

EdD, University of San Francisco

Kazemifar, Farzan - *Assistant Professor, Mechanical Engineering* (2019)

BS, Sharif University of Technology, Iran

MS and PhD, University of Illinois at Urbana-Champaign

KC, Santosh - *Assistant Professor, Chemical and Materials Engineering* (2019)

BS and MS, Tribhuvan University, Nepal

MS and PhD, University of Texas, Dallas

Keles, Ozgur - *Associate Professor, Chemical and Materials Engineering* (2015)

BS and MS, Middle East Technical University, Turkey

PhD, Purdue University

Kelly, Kristan - *Senior Associate Athletics Director for Compliance* (2021)

BS, Saint Louis University

JD, University of Missouri, Kansas City

Kelly, Resa - *Professor and Director of Science Education, Chemistry* (2005)

BA, University of Notre Dame

BA and MA, University of Northern Iowa

MS and PhD, University of Northern Colorado

Kenyon, Paula - *Research Development Specialist, Office of Research* (2020)

BA and MA, California State University, Chico

Kerstein, Spencer - *Assistant Athletic Director, Communications, Sports Information* (2021)

BA, Western Michigan University

Kersten, Trent - *Volleyball Head Coach, Women's Volleyball* (2020)

BS, University of California, Los Angeles

Khatami, Ehsan - *Associate Professor, Physics and Astronomy* (2014)

BS, Isfahan University of Technology, Iran

MS, Sharif University of Technology, Iran

PhD, University of Cincinnati

Khayatian, Mohammad - *Associate Professor, Computer Engineering* (2021)

MSc and BS, Shiraz University, Iran

PhD, Arizona State University

Khavul, Susanna - *Professor, School of Management* (2017)

DBA, Boston University

Khuri, Sami - *Professor, Computer Science* (1992)

BS, American University of Beirut, Lebanon

MS and PhD, Syracuse University

Kil, Sang - *Associate Professor, Justice Studies* (2007)

MA and PhD, Arizona State University

Kim, Chang Kim - *Professor, Design* (2000)

MFA, Hongik University, South Korea

MFA, University of Illinois at Urbana-Champaign

Kim, Suneuy - *Associate Professor, Computer Science* (2001)

PhD, Pennsylvania State University

Kini, Mitesh - *Director, Enterprise Systems* (2013)

BE, Veermata Jijabai Technological Institute, India

MS, North Carolina State University

Kinney, Edith - *Associate Professor, Justice Studies* (2014)

JD and PhD, University of California, Berkeley

Kinney, Kevin - *Director of Residential Life, Housing Coordination* (2016)

BS, Bloomsburg University of Pennsylvania

MA, Montclair State College

Klaw, Elena - *Professor, Psychology* (2000)

PhD, University of Illinois at Urbana-Champaign

Klee, Gary - *Professor, Environmental Studies* (1977)

PhD, University of Oregon

Klein, Michael - *Assistant Professor, Marketing and Business Analytics* (2017)

PhD, McGill University, Canada

Klock, Metha - *Assistant Professor, Environmental Studies* (2019)

PhD, Louisiana State University

Knepper, Paul - *Professor and Chair, Justice Studies* (2020)

PhD, Arizona State University

Kochanski, Adam - *Assistant Professor, Meteorology and Climate Science* (2020)

PhD, University of Nevada

Koev, Plamen - *Professor, Mathematics* (2008)

PhD, University of California, Berkeley

Komives, Claire - *Professor, Chemical and Materials Engineering* (1999)

BS, Tufts University

MS and PhD, University of Pittsburgh

Kong, Alan - *Contract Manager, Procurement* (2021)

MBA, Saint Mary's College of California

Konya, Jeffrey - *Director of Athletics, Athletic Director's Office* (2021)

JD, University of Iowa

Koo, Hahn - *Associate Professor, Linguistics and Language Development* (2008)

BA, Seoul National University, South Korea

PhD, University of Illinois at Urbana-Champaign

Korani, Tina - *Assistant Professor, Journalism and Mass Communications* (2017)

BA, Art University of Tehran, Iran

MFA, Louisiana State University

Kothari, Tanvi - *Associate Professor, Global Innovation and Leadership* (2012)

BS, University of Mumbai, India

PhD, Temple University

Kraskouskas, Jennifer - *Assistant Bursar, Bursar's Office* (2017)

MBA, Boston University

Kress, Monika - *Professor and Chair, Physics and Astronomy* (2004)

BA and PhD, Rensselaer Polytechnic Institute

Krishnan, Sudha - *Assistant Professor, Special Education* (2021)

MA, Boston College

EDD, University of San Francisco

Krishnaswamy, Revathi - *Professor and Graduate Coordinator, English* (2994)

PhD, Kent State University

Krow-Lucal, Samuel - *Assistant Director of General Accounting, Accounting Services* (2013)

BA, University of California, Santa Cruz

MBA, San Jose State University

Kubota, Jamie - *Assistant Professor, Nutrition, Food Science and Packaging* (2008)

MS, San Jose State University

Kulkarni, Saili - *Associate Professor, Special Education* (2018)

BA, Boston University

MS and PhD, University of Wisconsin, Madison

Kumar, Anil - *Associate Professor and Associate Director of Human Factor/Ergonomics, Industrial and Systems Engineering* (2015)

PhD, Western Michigan University

Kumar, Gautam - *Assistant Professor, Chemical and Materials Engineering* (2021)

BTech, Indian Institute of Technology, Kanpur

PhD and MS, Lehigh University

Kwan, Yvonne - *Assistant Professor, Sociology and Interdisciplinary Social Sciences* (2017)

PhD, University of California, Santa Cruz

L

Lacy, Veneice - *Assistant Professor, Educational Leadership* (2021)

PhD, Washington State University

Lage, Kathryn - *Associate Librarian, Moss Landing Marine Lab* (2016)

BA, University of California, Santa Cruz

MLIS, San Jose State University

Laker, Jason - *Professor and Chair, Counselor Education* (2010)

PhD, University of Arizona

Lattimer, Heather - *Dean, College of Education* (2018)

DED, University of San Diego

Lambrecht, Susan - *Professor, Biological Sciences* (2004)

PhD, Oregon State University

Lane, Emily - *Director of Development, College of Science* (2016)

BA, University of California, Sacramento

Laraway, Sean - *Professor, Psychology* (2008)

BA, Central Michigan University

MA and PhD, Western Michigan University

Lasser, Robin - *Professor, Art and Art History* (1990)

BA, University of California, Los Angeles

MFA, Mills College

Lau, Feyon - *Student Ombudsperson, Student Services* (2019)

MA, San Jose State University

Lazerson, Danielle - *Assistant Professor, Accounting and Finance* (2020)

MBA, Chapman University

PhD, Louisiana State University

Le, Thuy - *Professor and Chair, Electrical Engineering* (1996)

BS, MS, and PhD, University of California, Berkeley

Ledesma Limon, Maria - *Associate Professor, Educational Leadership* (2020)

PhD, University of California, Los Angeles

Lee, Bee Leng - *Professor, Mathematics* (2005)

BSS, National University of Singapore

MS and PhD, University of Wisconsin, Madison

Lee, Diane - *Assistant Professor, Design* (2018)

BS, University of Cincinnati

MFA, Rhode Island School of Design

Lee, Douglas - *Assistant Director for Assessment and Planning, Housing Business Services* (2022)

MA, University of Maryland, Baltimore County

Lee, Hojeong - *Assistant Professor, Film and Theatre* (2021)

BA, Ewha Womans University, South Korea

MA, Yonsei University, South Korea

MA, New York University

PhD, Temple University

Lee, Hyojin - *Assistant Professor, Marketing and Business Analytics* (2016)

BS and MS, Seoul National University, South Korea

PhD, Ohio State University

Lee, James - *Senior Director of Faculty Affairs, University Personnel* (2005)

BA, University of Notre Dame

MA, University of Florida

PhD, Indiana University, Bloomington

Lee, Jihyun - *Assistant Professor, Kinesiology* (2017)

BS and MS, Seoul National University

PhD, Ohio State University

Lee, Kathy - *Associate Director, Counseling and Psychological Services* (2021)

BA, University of California, Irvine

MA, Pepperdine University

PhD, Palo Alto University

Lee, Na Youn - *Assistant Professor, School of Social Work*

BA, Yonsei University, South Korea

MIA and MSW Columbia University

PhD, University of Michigan, Ann Arbor

Lee, Peter Allen - *Professor and Director, School of Social Work* (1999)

BA, MSW, and PhD, University of California, Berkeley

Lee, Sang Eun - *Professor, School of Social Work* (2006)

BA, Seoul Women's University, South Korea

MSW, University of Michigan, Ann Arbor

PhD, University of California, Los Angeles

Lee, Sang-Joon - *Professor, Mechanical Engineering* (2002)

PhD, Massachusetts Institute of Technology

Lee, Seungjoon - *Assistant Professor, Applied Data Science* (2020)

MS and PhD, Brown University

Lee, Wei-Chien - *Counselor III, Counseling and Psychological Services* (2004)

PhD, Purdue University

Lee, Wendy - *Assistant Professor, Computer Science* (2018)

BS, University of Waterloo, Canada

MS, San Jose State University

MS and PhD, University of California, Santa Cruz

LeFever, James - *Director of Technology, College of Humanities and Arts* (1984)

BA, San Francisco State University

Leineweber, Matthew - *Assistant Professor, Biomedical Engineering* (2017)

BS, University of Portland

MS and PhD, Cornell University

Leisenring, Amy - *Associate Dean, Inclusive Student Success, College of Graduate Studies* (2005)

BA, Miami University, Ohio

MA, New Mexico State University

PhD, University of Colorado

Lemon, Kathy - *Associate Professor, School of Social Work* (2006)

BA, University of California, Santa Cruz

MSW, San Jose State University

PhD, University of California, Berkeley

Lester, Gretchen - *Associate Professor, School of Management* (2012)

PhD, University of Nebraska-Lincoln

Lester, Thomas - *Associate Professor, Urban and Regional Planning* (2019)

BA, University of Pennsylvania

MUPP, University of Illinois

PhD, University of California, Berkeley

Li, Hua - *Professor, Computer Engineering* (1997)

BS, Tianjin University, China

MS and PhD, University of Iowa

Li, Kara - *Associate Vice President, Strategic Planning and Portfolio Management* (2016)

BBA, Georgia State University

Li, Zongchao - *Associate Professor, Journalism and Mass Communications* (2016)

PhD, University of Miami

Lim, Bob - *Vice President, Information Technology and Chief Information Officer* (2017)

MBA, Saint Mary's College of California

Lin, Ellen - *Special Consultant, Counseling and Psychological Services* (2021)

BA, University of California, Los Angeles

PhD, Washington State University

Lindelof, Leanne - *Professor, English* (2022)

BA, Brigham Young University

MA and MFA, San Jose State University

Lington, Aaron - *Professor, Music and Dance* (2004)

BM, University of Houston

MM and DMA, University of North Texas

Liss, Wendi - *Deputy Title IX Officer, Title IX* (2017)

JD, Loyola University of Chicago

Liu, Hongrui - *Assistant Professor, Industrial and Systems Engineering* (2017)

PhD, University of Washington

Liu, Kaikai - *Associate Professor, Computer Engineering* (2015)

PhD, University of Florida

Liu, Geoffrey - *Professor, School of Information* (2995)

BA and MA, Wuhan University, China

PhD, University of Hawaii at Manoa

Liu, Rui - *Associate Professor, Economics* (2013)

BS, Nankai University, China

MS, City University of Hong Kong, Hong Kong

PhD, University of California, Irvine

Liu, Ziming - *Professor, School of Information* (2000)

MS, Zhongshan University, China

PhD, University of California, Berkeley

Liz, Jordan - *Assistant Professor, Philosophy* (2018)

PhD, University of Memphis

Loatfi, Mehregan (Morgan) - *Senior Construction Manager, Capital Outlay Project Management* (2017)

BS, West Virginia University

Loertscher, David - *Professor, School of Information* (1996)

BS, University of Utah

ML, University of Washington

PhD, Indiana University, Bloomington

Lohmann, Tammy - *Head Coach, Softball* (2020)

MA, Bradley University

Lombardi, Paul-Vincent - *Assistant Professor, Economics* (2018)

PhD, University of California, Irvine

Long, Avizia - *Assistant Professor, World Languages and Literatures* (2018)

BA, University of North Carolina at Chapel Hill

MA, North Carolina State University

MA and PhD, Indiana University

Long, Katrina - *Assistant Professor, Occupational Therapy* (2020)

BA, California State University, Channel Islands

MA, Thomas Jefferson University

PhD, Columbia University

Loomba, Arvinder - *Professor, Global Innovation and Leadership* (1999)

BMe, Bangalore University, India

MBA, California State University, East Bay

PhD, University of Southern California

Lopez-Arreola, Juanita (Sarah) - *Director of Resources and Operations, College of Education* (2001)

BA and MPA, San Jose State University

Louie, Therese - *Professor, Marketing and Business Analytics* (2003)

PhD, University of California, Los Angeles

Love, Matthew - *Assistant Professor, Special Education* (2018)

BS, MEd, and PhD, University of Nevada, Las Vegas

Lowe, Carli - *Senior Assistant, University Library* (2019)

MLIS, University of Illinois at Urbana-Champaign

Lucero Wulf, Jane - *Interim Nurse Manager, Student Wellness Center* (2021)

BS, Santa Clara University

Ludka, Bonnie - *Assistant Professor, Geology* (2021)

BS, James Madison University

MS and PhD, University of California, San Diego

Luna, Christopher - *Assistant Professor, Music and Dance* (2021)

BA, Universidad Iberoamericana, Mexico

BM, National Autonomous University of Mexico, Mexico

MA, Mills College

PhD, University Of Virginia

Luo, Lili - *Professor, School of Information* (2007)

BA and MS, Peking University, China

PhD, University of North Carolina at Chapel Hill

Lupton, Nathaniel - *Assistant Professor, Global Innovation and Leadership* (2020)

MBA, Carleton University, Canada

PhD, Richard Ivey School of Business, Canada

Lustigman, Lyle - *Assistant Professor, Communicative Disorders and Sciences* (2016)

BA, MA, and PhD, Tel Aviv University, Israel

Luu, Raymond - *Associate Director of Commercial Services, Business Services* (2019)

BS, San Francisco State University

Ly, Anh - *Director of Development for Humanities and the Arts, Development University Advancement* (2017)

PhD, Northwestern University

M

Ma-Kellams, Christine - *Assistant Professor, Psychology* (2019)

BA, University of California, Berkeley

PhD, University of California, Santa Barbara

Macdonald, Scott - *Deputy Athletic Director for Public Relations & Content Strategy, External Athletic Operations* (2021)

BS, St. Andrews University

MPA, Oakland University

MacLeod, Megan - *Associate Athletics Director, Athletic Marketing* (2022)

MS, University of Illinois Urbana-Champaign

Madadi, Mahboubeh - *Assistant Professor, Marketing and Business Analytics* (2019)

BS, Shahid Beheshti University, Iran

MS, University of Tehran

MS, University of Arkansas

PhD, University of Arkansas

Madura, Thomas - *Assistant Professor, Physics and Astronomy* (2016)

PhD, University of Delaware

Maffini, Cara - *Associate Professor, Child and Adolescent Development* (2014)

BA and BS, University of California, Davis

MA, Sacramento State University

PhD, Indiana University, Bloomington

Maguire, Matthew - *Assistant Professor, School of Management* (2018)

BA, Cornell University

MSc, London School of Economics and Political Science

PhD, Boston University

Mahendra, Nidhi - *Professor and Chair, Communicative Disorders and Sciences* (2016)

BSc, All India Institute of Medical Sciences, India

MS, All India Institute of Speech and Hearing, India

PhD, University of Arizona

Mahzabeen, Fariah - *Assistant Professor, Technology* (2017)

PhD, Stanford University

Main, Linda - *Professor, School of Information* (1985)

BA and MA, University of Dublin, Ireland

MLIS, University of Wales

PhD, University of Illinois at Urbana-Champaign

Mak, Ronald - *Professor, Computer Engineering* (2021)

BS and MS, Stanford University

Makani, Betty - *Executive Director, Career Center* (2014)

PhD, Kansas State University

Malinowski, David - *Assistant Professor, Linguistics and Language Development* (2018)

BA, University of California, Berkeley

MA, San Francisco State University

PhD, University of California, Berkeley

Malloy, Kerri - *Assistant Professor, Humanities* (2021)

BA, Humboldt State University

MLL, University of Tulsa

PhD, Gratz College

Malloy, Suzanne - *Professor and Undergraduate Coordinator, Nursing* (1981)

BSN, University of Utah

MSN, University of Nebraska-Omaha

EdD, Nova University

Malutta, Jennifer - *Senior Director, Community and Government Relations* (2019)

BA, University of Kansas

Manaloor, Jacob - *Director of Development for Research and Innovation, Development University Advancement* (2021)

BBA, Indiana University - Kelley School of Business

JD, Indiana University-Purdue University at Indianapolis

Manuel, Anita - *Associate Director, Career Center* (2004)

BA, University of California, Santa Barbara

MA, Santa Clara University

Marachi, Roxana - *Professor, Teacher Education* (2006)

BS, University of Washington

MA and PhD, University of Michigan, Ann Arbor

Maraghehmoghaddam, Armin - *Assistant Professor, Technology* (2020)

PhD, Iowa State University

Marbouti, Farshid - *Assistant Professor, Interdisciplinary Engineering* (2016)

BS, Sharif University of Technology, Iran

MS, Amirkabir University of Technology, Iran

MA, Simon Fraser University, Canada

PhD, Purdue University

Marouf, Essam - *Professor, Electrical Engineering* (1990)

PhD, Stanford University

Marsh, Eleanor - *Associate Professor, World Languages and Literatures* (2007)

PhD, University of California, Davis

Martinez, Christie - *Manager of Employment Authorization and Compliance Services, University Personnel* (2014)

BS, San Jose State University

Martinez, Jerry - *Associate Professor, English* (2021)

MFA, George Mason University

Martinez, Maria - *University Registrar, Office of the Registrar* (2022)

PhD, Chapman University

Marwan, Rania - *Assistant Professor, Political Science* (2021)

MPA, American University, Egypt

DBA, Ain Shams University, Egypt

PhD, Auburn University

Marx, Robert - *Assistant Professor, Child and Adolescent Development* (2019)

BA, Brandeis University

MAT, Boston University

PhD, Vanderbilt University

Mashinchi, Kenneth - *Executive Director of Strategic Communications and Media Relations, Strategic Communications and Marketing* (2020)

BA, California State University, Stanislaus

MS, University of Southern California

Massey, Kimberly - *Professor and Associate Chair, Film and Theatre* (1987)

BS, University of Texas, Austin

MA, San Francisco State University

PhD, University of Utah

Masucci, Matthew - *Associate Dean, College of Health and Human Sciences* (2002)

BA, Salisbury University

MA, Ohio University

PhD, University of Tennessee

Mathias, Harold - *Associate Professor, Film and Theatre* (2012)

BA and MA, San Francisco State University

Mathur, Gita - *Professor, School of Management (2002)*

BTech and MTech, Indian Institute of Technology, India

MBA, University of California, Berkeley

PhD, Rensselaer Polytechnic Institute

DBA, Harvard University

Mathur, Ravisha - *Associate Professor, Child and Adolescent Development (2002)*

BS, Pennsylvania State University

MA and PhD, Purdue University

Mathur, Shishir - *Professor, Urban and Regional Planning (2004)*

BA, Regional Engineering College Tiruchirappalli, India

MUP, School of Planning and Architecture, India

PhD, University of Washington

Mattarelli, Elisa - *Associate Professor, School of Management (2019)*

MS, University of Bologna, Italy

PhD, University of Padova, Italy

Matthews, Lezlee - *Director for Co-Curricular Learning, Educational Equity and Assessment , Student Affairs (2022)*

PhD, University of California, Los Angeles

Mauldin, Kasuen - *Professor, Nutrition, Food Science & Packaging (2011)*

BS, Southern Methodist University

PhD, University of California, Berkeley

McClusky, John - *Professor, Design (2002)*

BS, University of Cincinnati

MA, Ohio State University

McConnell, Kathleen - *Professor, Communication Studies (2009)*

BA, Evergreen State College

MA, Bowling Green State University

PhD, Indiana University, Bloomington

McCraw, William - *Professor, Political Science (2006)*

PhD, Stanford University

McDonald, Birgitte - *Associate Professor, Moss Landing Marine Lab (2015)*

MA, Sonoma State University

PhD, University of California, Santa Cruz

McElhatton, Robin - *Assistant Director of Media Relations, Strategic Communications and Marketing (2015)*

BA, The University of Arizona

McElroy, Coleetta - *Interim Senior Associate Vice President, Enrollment Management (1988)*

BA, California State University, Long Beach

MPA, San Jose State University

McGahee, Bonnie - *Assistant Director of Residential Life, Housing Coordination (2018)*

MS, University of Baltimore

McGee, Elizabeth - *Professor, Biological Sciences (1997)*

BA and MA, University of California, Berkeley

MA and PhD, State University of New York, Stony Brook

McGiven, Kevin - *Football Assistant Coach/Offensive Coordinator, Football (2018)*

BSA, Utah Valley University

MS, Brigham Young University

McKee, Alison - *Professor and Vice Chair, Film and Theatre (2002)*

BA and MA, University of California, Santa Barbara

PhD, University of California, Los Angeles

McKenzie, Craig - *Assistant Professor, Music and Dance (2018)*

BM, University of Colorado at Boulder

MA, San Jose State University

DMA, University of Miami

McKinnon, Tamara - *Professor, Nursing (1992)*

MS, San Jose State University

McMullin, Kurt - *Professor, Civil and Environmental Engineering (1996)*

BS, Iowa State University

MS and PhD, University of California, Berkeley

McNabb, Richard - *Professor, Associate Chair and Writing Programs Administrator, English (2014)*

PhD, University of Arizona

McNiece, Zachary - *Assistant Professor, Counselor Education* (2022)

PhD, University of Florida

McNeil, Melanie - *Professor, Chemical and Materials Engineering* (1990)

BS, MS, and PhD, University of California, Santa Barbara

McNiesh, Susan - *Professor, Nursing* (2018)

PhD, University of California, San Francisco

McSharry, Kathleen - *Professor, English* (2015)

PhD, University of Wisconsin, Madison

Mead-Nytko, Danielle - *Assistant Professor, Child and Adolescent Development* (2016)

BS, University of Mary Washington

MA and PhD, George Mason University

Medders, Carrie - *Senior Director of Technology and Training, University Personnel* (1998)

BS, Arizona State University

MS, West Virginia University

Megwalu, Anamika - *Associate Librarian, University Library* (2016)

PhD, Long Island University, Brooklyn

Memarzadeh, Faranak - *Associate Professor, Hospitality, Tourism and Event Management* (2015)

PhD, Texas Tech University

Mena, Dolores - *Professor, Counselor Education* (2005)

PhD, University of California, Santa Cruz

Mendenhall, Monica - *Student Affairs Case Manager, Student Services* (2021)

MA, Saint Mary's College of California

Mendoza, Valerie - *Associate Professor, Art and Art History* (2004)

BFA, San Jose State University

MFA, California College of Arts and Crafts

Meniketti, Marco - *Professor, Anthropology* (2006)

BA, University of California, Berkeley

MA, Michigan State University

MS, Michigan Technological University

PhD, Michigan State University

Mercado, Crystal - *Interim Manager, University Personnel* (2015)

BBA, Loyola Marymount University

Merz, Michael - *Professor and Chair, Marketing and Business Analytics* (2008)

PhD, University of Hawaii at Manoa

Merz, Miwa - *Associate Professor, Marketing and Business Analytics* (2011)

PhD, University of Hawaii at Manoa

Meshcheryakov, Artem - *Associate Professor, Accounting and Finance* (2015)

BA, Volgograd State Technical University, Russia

MBA, Marshall University

PhD, Texas Tech University

Messing, Nicholas - *Student and Regional Alumni Engagement Specialist, Alumni and Community Engagement* (2020)

BA, MidAmerica Nazarene University

MS, University of Central Missouri

Meth, Michael - *Dean, University Library* (2021)

MS, University of Toronto, Canada

Metzger, Ellen - *Professor, Geology* (1989)

PhD, Syracuse University

Middaugh, Ellen - *Associate Professor, Child and Adolescent Development* (2014)

BA, George Washington University

PhD, University of California, Berkeley

Miles, Timothy - *Head Coach, Men's Basketball* (2021)

MS, Northern State University

Miller, Jonathan - *Professor, Geology* (1999)

PhD, University of North Carolina

Miller, Shannon - *Dean, College of Humanities and Arts* (2014)

BA, Dartmouth College

MA and PhD, University of California, Santa Barbara

Miller Conrad, Laura - *Associate Professor, Chemistry* (2014)

BA, Macalester College

PhD, University of California, Berkeley

Millora, Melissa (Lisa) - *Vice President for Strategy and Institutional Affairs & Chief of Staff , Office of President* (2019)

BA and MA, Boston College

MA and PhD, University of California, Los Angeles

Mir, Nader - *Professor, Electrical Engineering* (2001)

MS and PhD, Washington University, Saint Louis

Miranda, Celinda - *Counselor II, Counseling and Psychological Services* (2015)

MSW, San Jose State University

MDI, American Baptist Seminary of the West

Mitchell, Linda - *Professor, English* (1998)

PhD, University of Southern California

Mitchler, Joseph - *Tower Card Manager, Bursar's Office* (2018)

BS, San Jose State University

Mocarski Jr, Richard - *Associate Vice President for Research, Office of Research* (2021)

PhD, University of South Alabama

Moh, Melody - *Professor and Chair, Computer Science* (1991)

PhD, University of California, Davis

Moh, Teng-Sheng - *Professor, Computer Science* (2004)

PhD, University of California, Davis

Mohlenhoff, Marko - *Student Affairs Case Manager, Student Services* (2017)

BA, Cornell University

MED, Colorado State University

Mok, Gwendolyn - *Professor, Music and Dance* (2003)

BA, Yale University

MM and DMA, State University of New York, Stony Brook

Monday, Nyle - *Librarian, University Library* (2005)

BA, University of Hawaii at Manoa

MA, California State University, Bakersfield

MS, San Jose State University

Monsur, Seham (Sami) - *Senior Director of Academic Budgets, Administration and Operations, Provost/SVP Academic Affairs* (2003)

BA, San Jose State University

Mooradian, Norman - *Assistant Professor, School of Information* (2022)

BA, Claremont College

MA and PhD, Ohio State University

Moore, Dorothy - *Assistant Professor, Nursing* (2018)

DNP, California State University, Northern California Consortium

Morelos-Zaragoza, Robert - *Professor, Electrical Engineering* (2002)

BSEE and MSEE, National Autonomous University of Mexico, Mexico

PhD, University of Hawaii at Manoa

Moriarty, Thomas - *Professor, English* (2014)

PhD, Purdue University

Morris, Susannah - *Director, Study Abroad and Away* (2016)

MA, School for International Training

Morris, Nicole - *Director of Cleary and Drug-Free Schools and Communities Act Compliance, Administration and Finance* (2019)

BA and MS, Portland State University

Mou, Bo - *Professor, Philosophy* (2000)

PhD, University of Rochester

Mourtos, Nikos - *Professor and Chair, Aerospace Engineering* (1985)

BS, University of Patras, Greece

MS, Engineer, and PhD, Stanford University

Mullin, Deborah - *Director of Resources and Operations, Custodial* (2016)

Mullin, James - *Lead Custodial Crew Manager, Custodial* (2016)

Mullen, Elizabeth - *Associate Professor, School of Management* (2015)

PhD, University of Illinois at Chicago

Muller, Gilles - *Professor, Chemistry* (2012)

BS and MS, University Louis Pasteur, France

PhD, University of Lausanne, Switzerland

Mullin, James (Jim) - *Custodial Crew Manager* (2016)

Mulvaney, Dustin - *Professor, Environmental Studies* (2011)

BA and MS, New Jersey Institute of Technology

PhD, University of California, Santa Cruz

Munaganti, Pavankumar - *Assistant Professor, Marketing and Business Analytics* (2020)

PhD, Washington State University

Munayer, Ibrahim - *Head Coach, Athletic Performance, Strength and Conditioning* (2021)

MS, Texas Tech University

Mune, Christina - *Associate Dean of Innovation and Research Management, University Library* (2012)

MLIS, San Jose State University

Muñoz-Muñoz, Eduardo - *Assistant Professor, Teacher Education* (2014)

MA, University of California, Berkeley

MA and PhD, Stanford University

Murphy, Veronica - *Director, Donor Relations and Stewardship* (2006)

BA, San Jose State University

Muthig, Michael - *Director of Innovation, Office of Innovation* (2020)

BS and PhD, University of South Carolina

MS, University of Kentucky

Myatt, Rodney - *Professor, Biological Sciences* (2009)

N

Nathan-Roberts, Dan - *Associate Professor, Industrial and Systems Engineering* (2014)

BS, University of Rochester

MSE and PhD, University of Michigan

Ndon, Udeme - *Professor, Civil and Environmental Engineering* (1996)

PhD, University of Iowa

Nellen, Annette - *Professor and Director of MST Program, Accounting and Finance* (1990)

BS, California State University, Northridge

MBA, Pepperdine University

JD, Loyola Law School

Nelson, Joshua - *Associate Professor, Design* (2013)

MA, University of Washington

Nguyen, Hung - *Title IX Project Manager, Title IX* (2022)

BS, San Jose State University

Nguyen, Alice - *Assistant Director of Web Development, Strategic Communications and Marketing* (2020)

MPA, California State University, Stanislaus

Nguyen, Leon - *IT Program Director, Strategic Plan and Portfolio Management* (1999)

BA, San Jose State University

Nguyen, Ngoc - *Assistant Parking Manager, Parking Services* (2002)

AS, Mission College

BS, San Jose State University

Nicasio Solis, Luz Braulio - *Senior Construction Manager, Capital Outlay Project Management* (2022)

Bs, San Jose State University

Nie, Yining - *Assistant Professor, Linguistics and Language Development* (2022)

BA, University of Cambridge

MA, University of Toronto, Canada

PhD, New York University

Nieva Jr., Norberto - *Chief Engineer, Co-Generation Plant* (2019)

BSEE, Adamson University

MBA, University of Phoenix

Nojan, Saugher - *Assistant Professor, College of Social Sciences* (2021)

PhD, University of California, Santa Cruz

Norris, Keenan - *Assistant Professor, English* (2017)

PhD, University of California, Riverside

Nymeyer, Matt - *Director, Environmental Health and Safety* (2014)

BS, Northern Arizona University

MS, Arizona State University

O

O'Brien, Stephen - *Deputy Director, Athletics* (2017)

BA, Santa Clara University

JD, University of Southern California

O'Dell, Shaun - *Assistant Professor, Art and Art History* (2019)

MFA, Stanford University

O'Malley, Rachel - *Professor, Environmental Studies* (1998)

PhD, University of California, Santa Cruz

O'Rorke, Ryan - *Associate Athletics Director for Marketing, Athletic Marketing* (2018)

BA, University of North Carolina at Chapel Hill

Odum, Derrick - *Assistant Football Coach/Defensive Coordinator, Football* (2016)

BS, University of Utah

Oh, Dahyun - *Assistant Professor, Chemical and Materials Engineering* (2017)

BS, Seoul National University, South Korea

PhD, Massachusetts Institute of Technology

Okamoto, Nicole - *Associate Dean for Undergraduate Programs and Student Success, College of Engineering* (2001)

BS, Calvin College

MS and PhD, University of Illinois at Urbana-Champaign

Okuda, Roy - *Professor, Chemistry* (1990)

BA, University of California, San Diego

PhD, University of Hawaii

Olson, Katharine - *Associate Professor, History* (2016)

BA, University of Chicago

PhD, Harvard University

Olson, Nathan - *Assistant Athletics Director for Annual Giving , External Athletic Operations* (2019)

BA, University of Minnesota, Morris

MED, University of Washington

Onita, Colin - *Assistant Professor, Accounting and Finance* (2018)

BBA, Academy of Economic Studies, Romania

MSc, Fogelman College of Business and Economics

PhD, University of Memphis

Ormsbee, Todd - Associate Professor, Humanities (2005)

MA and PhD, University of Kansas

Osland, Asbjorn - *Professor, Global Innovation and Leadership* (2002)

PhD, Case Western Reserve University

Ouverney, Cleber - *Professor, Biological Sciences* (2005)

BS, Occidental College

MS, California State University, East Bay

PhD, University of Southern California

Oyamot, Clifton - *Professor and Chair, Psychology* (2005)

BA, Reed College

PhD, University of Minnesota, Twin Cities

Ozemek, Haluk - *Professor, Computer Engineering* (1982)

PhD, University of Arkansas, Fayetteville

P

Pagani, Marco - *Interim Dean, Lucas College and Graduate School of Business* (2006)

MS, University of Montreal

PhD, Georgia State University

Painter, Sierra - *Assistant Director, External Athletic Operations* (2021)

BA and MA, San Jose State University

Paisant, Julie - *Senior Director of Employee Relations, Retention, and Equal Opportunity, University Personnel* (2012)

AA, Monterey Peninsula College

BA, California State University, Fresno

Pala, Atulkumar - *Senior Director of IT Computing Services, Computing Services* (2006)

BS, Yeshwantrao Chavan College of Engineering, India

Palmer, Dedra - *Senior Associate Athletics Director of Athletics, Athletics Facilities and Events* (2022)

MA, Canisius College

Palmer, Evan - *Associate Professor and Graduate Coordinator, Psychology* (2016)

BA, MA, and PhD, University of California, Los Angeles

Palos-Pons, Manel - *Assistant Professor, Journalism & Mass Communications* (2022)

PhD, University of California, San Diego

Panahi, Maggie - *IT Project Director, Strategic Planning and Portfolio Management* (2015)

PhD, University of San Francisco

Papa, Lester - *Assistant Professor, Psychology* (2021)

PhD, Utah State University

Papadopoulos, Periklis - *Professor, Aerospace Engineering* (1998)

PhD, Stanford University

Papazian, Mary - *Special Assistant to Chancellor, Office of the President* (2016)

PhD, University of California, Los Angeles

Parent, David - *Professor, Electrical Engineering* (1999)

BS, MS, and PhD, University of Connecticut

Park, Chulwoo (Charles) - *Assistant Professor, Public Health and Recreation* (2020)

BS, University of Utah

MSPH, Johns Hopkins Bloomberg School of Public Health

PhD, George Washington University

Park, Hyun-Sook - *Professor, Special Education* (2002)

PhD, University of California, Berkeley

Park, Taeho - *Professor and Director, Global Innovation and Leadership* (1988)

PhD, University of Wisconsin, Madison

Park, Younghee - *Associate Professor, Computer Engineering* (2013)

PhD, North Carolina State University

Parrish, Vicki - *Professor, Computer Engineering* (2018)

Patel, Niranjani - *Professor and Graduate Coordinator, Industrial and Systems Engineering* (2002)

BSc and MSc, Maharaja Sayajirao University of Baroda, India

MS, University of Illinois at Chicago

MS and PhD, Georgia Institute of Technology

Paul, Cassandra - *Associate Professor, Physics and Astronomy* (2012)

BA, State University of New York, Oswego

MS, University of Wyoming

PhD, University of California, Davis

Payumo, Nino Alexander - *Assistant Professor, Biological Sciences* (2020)

PhD, Stanford University

Pearce, Jon - *Professor, Computer Science* (1982)

PhD, University of California, Berkeley

Penate, Rey - *Senior Director of Online Recruitment, Academic Innovation and Online Initiatives* (2021)

MBA, Notre Dame de Namur University

Pendyala, Vishnu - *Assistant Professor, Applied Data Science* (2021)

MS, San Jose State University

MBA and ME, Osmania University, India

PhD, Santa Clara University

Peng, Chunhui - *Associate Professor, World Languages and Literatures* (2010)

PhD, University of California, San Diego

Peck, Deanna - *Director, Peer Connections* (1999)

MA, Indiana University Southeast

Percival, Garrick - *Professor and Chair, Political Science* (2012)

BA and MA, San Diego State University

PhD, University of California, Riverside

Pereira, Gary - *Assistant Professor, Geography* (2002)

PhD, University of Minnesota, Twin Cities

Pereira Pignotti, Giselle - *Associate Professor, Director of Didactic Program in Dietetics (DPD) Nutrition, Food Science and Packaging* (2014)

BS and MS, University of São Paulo

PhD, Arizona State University

Perez-Guerra, Maria - *University Risk Manager, Business Services* (2016)

Perez, Felipe - *Interim Distribution Service Manager, Distribution and Asset Services* (2006)

Perez, Ramon - *Interim Director of Resources & Operations, College of Health and Human Sciences* (1996)

MA, San Jose State University

Perez, Yazmin - *Manager for Leave, Workers' Compensation, and Accommodation Programs, University Personnel* (2021)

AA, San Jose City College

BA, San Jose State University

Petel, Amanda - *Director of Corporate and Foundation Relations, Development University Advancement* (2021)

BA, MA and PhD, University of California, Los Angeles

Peter, Kenneth - *Professor, Political Science* (1990)

BA, Stanford University

MA, University of Chicago

MA and PhD, Princeton University

Pham-Hi, Ninh - *Director of Internal Control, Administration and Finance* (2003)

MA, Chicago State University

Phillips, April - *Head Coach, Women's Basketball* (2022)

BA, Xavier University

Phillabaum, Scott - *Associate Professor and TESOL Coordinator Linguistics and Language Development* (2008)

BA, Tulane University

MA, Louisiana State University

PhD, University of California, Los Angeles

Pickering, Mary - *Professor, History* (1994)

BA, MA, and PhD, Harvard University

Pietsch, Carlie - *Assistant Professor, Geology* (2017)

PhD, University of Southern California

Pizarro, Marcos - *Associate Dean, College of Education* (1999)

BA, Stanford University

PhD, University of California, Los Angeles

Plato, Peggy - *Professor, Kinesiology* (1976)

BS, San Jose State University

MS, University of Arizona

PhD, Ohio State University

Pogodzinski, Joseph - *Professor, Economics* (1987)

PhD, State University of New York, Stony Brook

Pollett, Christopher - *Professor, Computer Science* (2001)

PhD, University of California, San Diego

Ponniah, Jonathan - *Assistant Professor, Electrical Engineering* (2017)

PhD, University of Illinois at Urbana-Champaign

Poo, Adriana - *Senior Assistant, University Library* (2012)

Portner, Ryan - *Assistant Professor, Geology* (2017)

PhD, Macquarie University, Australia

Potika, Aikaterini - *Assistant Professor, Computer Science* (2015)

PhD, National Technical University of Athens, Greece

Poza, Luis - *Assistant Professor, Teacher Education* (2018)

BA, Yale University

MS, Columbia University

PhD, Stanford University

Prado, Carolina - *Assistant Professor, Environmental Studies* (2018)

BA, San Diego State University

PhD, University of California, Berkeley

Preston, Stephanie - *Counselor I, Counseling and Psychological Services* (2013)

MS, Pacific Northwest College of Art

PhD, Pacific University School of Professional Psychology

Pries, Eleanor - *Assistant Professor, Design* (2018)

BA, Harvard University

MA, University of Virginia

MArch, University of California, Berkeley

Prioleau, Jean - *Men's Basketball Head Coach* (2017)

BS, Fordham University

Pritsker, Jeffrey - *Associate Director of Budget Planning and Administration, Budget and Financial Management* (2018)

BS, Purdue University

MBA, Miami University

PhD, Florida State University

Prochaska, Frederick - *Professor, School of Social Work* (2017)

BA, Pennsylvania State University

MSW, West Virginia University

MPH and PhD, University Of Pittsburgh

Prunty, Kathleen - *Senior Associate Vice President, Finance and Business Services* (2018)

BA, Pitzer College

Pruthi, Sarika - *Associate Professor, Global Innovation & Leadership* (2014)

BA and MA, University of Delhi, India

MA and PhD, University of Nottingham, UK

Pyeon, Jae-Ho - *Associate Professor, Civil and Environmental Engineering* (2007)

PhD, University of Florida

Q

Quach, Wendy - *Professor and Graduate Program Director, Communicative Disorders and Sciences* (2007)

BA and MA, University of Alberta, Canada

PhD, University of Nebraska-Lincoln

Quan, Gina - *Assistant Professor, Physics and Astronomy* (2019)

BA, University of California Berkeley

PhD, University of Maryland, College Park

Quan, Xiaohong - *Professor, Global Innovation and Leadership* (2007)

BS and ME, Peking University, China

PhD, University of California, Berkeley

Queale, Abby - *Director of Innovation, Office of Innovation* (2022)

Quill, Lawrence - *Professor, Political Science* (2006)

PhD, University of Essex, England

Quintanar, Mary - *Senior Associate Athletics Director of Human Resources, Athletics Internal Operations* (2019)

PhD, Stanford University

R

Rabin, Colette - *Professor, Teacher Education* (2006)

BA, Reed College

MA, San Jose State University

PhD, Mills College

Radford, Cameron - *Director of Football Digital Communications, Football* (2017)

BS, Oregon State University

Radlauer, Madalyn - *Assistant Professor, Chemistry* (2017)

BS, Stanford University

PhD, California Institute of Technology

Raghuram, Sumita - *Associate Professor, School of Management* (2019)

PhD, University of Minnesota

Rajan, Mahesh - *Professor, Marketing and Business Analytics* (2001)

PhD, University of California, Irvine

Rajkovic, Tijana - *Associate Professor, Accounting and Finance* (2015)

BS, University of Belgrade, Serbia

PhD, University of Missouri

Raman, Priya - *Associate Professor, Communication Studies* (2008)

BS, Osmania University College for Women, India

MA, University of Arizona

PhD, University of Arizona

Ramasubramanian, Anand - *Professor, Chemical and Materials Engineering* (2016)

PhD, Rice University, Houston, Texas

Ramirez, Johnny - *Assistant Professor, Chicana and Chicano Studies* (2021)

PhD, University of California, Los Angeles

Ramirez, Maria -- *Director of Advancement Services, Advancement and Campaign Operations* (1998)

Ramirez, Ruby - *Assistant Professor, World Languages and Literatures* (2016)

PhD, University of California, Riverside

Ramirez, Terri - *Director of Resources and Operations, College of Social Science* (2007)

BA, University of Phoenix

Rampini, Costanza - *Assistant Professor, Environmental Studies* (2016)

PhD, University of California, Santa Cruz

Randle, Michael - *Associate Director, Student Athlete Resource Center*(1999)

BS, California State University, Los Angeles

MS, San Jose State University

Rao, Alaka - *Associate Professor, School of Management* (2009)

PhD, University of California, Irvine

Rascón, Alberto - *Associate Professor, Chemistry* (2013)

BS, California State University, Bakersfield

PhD, University of Arizona

Rasmussen, David - *Senior Associate Athletics Director for Compliance* (2018)

BA, Brigham Young University

JD, Pennsylvania State University

Rauch, Lisa - *Chair, Nursing* (2004)

AA, De Anza College

BS and MS, San Jose State University

DNP, University of San Francisco

Raynsford, Anthony - *Associate Professor, Art and Art History* (2008)

PhD, University of Chicago

Rawski, Jonathan - *Associate Professor, Linguistics & Language Development* (2021)

BA, University of Minnesota

MS, Higher School of Economics

PhD, Stony Brook University

Reade, Carol - *Professor, Global Innovation and Leadership* (2005)

PhD, London School of Economics and Political Science, England

Rebmann, Kristen - *Professor, School of Information* (2007)

PhD, University of California, San Diego

Rech, Sabine - *Professor and Director of Biotechnology Program, Biological Sciences* (1986)

BS, University of Santa Clara

MA, San Jose State University

PhD, University of California, Davis

Record, Matthew - *Assistant Professor, Political Science* (2017)

PhD, Ohio State University

Redd, Jennifer - *Senior Director, eCampus* (2011)

BS and MED, University of Nevada, Las Vegas

MS, California State University, Fullerton

PhD, Iowa State University

Reed, Ben - *Assistant Professor, Computer Science* (2018)

BA, Miami University, Oxford

MS, DePaul University

PhD, University of California, Santa Cruz

Reed, Donald - *Professor, Geology* (1991)

PhD, University of California, San Diego

Reekie, Shirley - *Professor, Kinesiology* (1982)

BA, University of Liverpool, England

MA, University of Leeds, England

PhD, Ohio State University

Rees, Matthew - *Senior Director, University Housing* (2005)

MA, Teachers College, Columbia University

Reimer, Kendra - *Director of Track/Field/Cross Country, Women's Cross Country* (2018)

MS, Texas A&M University

Reis, Seniorina - *Professor, Educational Leadership* (2018)

BA, University of California, Santa Cruz

MA, San Jose State University

EDD, University of La Verne

Reitz, Stephanie - *Senior Director, Accounting Services* (2022)

BS, Mcpherson College

Rejeb, Jalel - *Associate Professor, Electrical Engineering* (2000)

PhD, Syracuse University

Renzi, Michael - *Associate Vice President of Budget Planning and Administration, Budget and Financial Management* (2021)

JD, Santa Clara University

Reyes, Migdalia - *Professor, School of Social Work* (1994)

BA, University of Puerto Rico, Rio Piedras Campus, Puerto Rico

MSW, University of Connecticut

PhD, University of Massachusetts, Amherst

Rietz, Justin - *Assistant Professor, Economics* (2011)

BA, Stanford University

MBA, University of California, Berkeley

MA, San Jose State University

PhD, University of Santa Cruz

Riley, Shannon Rose - *Professor, Chair, and Coordinator of Creative Arts Program, Humanities* (2008)

BFA, Maine College of Art

MFA, Tufts University

PhD, University of California, Davis

Rios, Andro - *Assistant Professor, Chemistry* (2023)

BS, California State University, Sacramento

MS, University of California, San Diego

PhD, University of California, San Diego

Rios, Shauna - *Director for Financial Support and Innovation, Finance Support* (2007)

AA, Modesto Junior College

BA and MPA, California State University, Stanislaus

Rivera, Ferdinand - *Professor, Mathematics* (2002)

PhD, Ohio State University

Rivers, Daniel - *Assistant Professor, Humanities* (2019)

BA, Sonoma State University

MA, New York University

PhD, Claremont Graduate University

Roberts-Douglass, Karisman - *Counselor II, Counseling and Psychological Services* (2010)

PsyD, Alliant International University

Rodan, Simon - *Professor, School of Management* (2002)

BS, Imperial College, England

MBA and PhD, Institut Européen d'Administration des Affaires, France

Roddick, Cheryl - *Professor, Mathematics* (1998)

PhD, Ohio State University

Rodgers, Bernadette - *Associate Director, Enrollment Services Communication* (2011)

BA, California State University, Chico

Rodriguez, Patricia - *Administrative Resources Specialist, Office of Research* (2001)

BS and MA, San Jose State University

Rogers, Ronald - *Interim Vice Provost for Academic Innovation, Provost/SVP Academic Affairs* (1999)

BA, University of California, Santa Cruz

MA and PhD, Rutgers University

Rohrmeier, Kerry - *Assistant Professor, Urban and Regional Planning* (2014)

BA, Sierra Nevada College

MA, California Polytechnic State University, San Luis Obispo

PhD, University of Nevada, Reno

Rojas, Carlos - *Assistant Professor, Computer Engineering* (2019)

PhD, University of California, Davis

Roldan, Maria - *Professor, Information Systems and Technology* (2011)

PhD, University of California, Los Angeles

Rollerson, Eric - *Executive Director, University Housing Services* (2019)

MS, Oklahoma State University

Romanowsky, Aaron - *Associate Professor, Physics and Astronomy* (2012)

BS, University of California, Santa Barbara

MA and PhD, Harvard University

Rondilla, Joanne Marie - *Assistant Professor, Sociology & Interdisciplinary Social Sciences* (2017)

PhD, University of California, Berkeley

Rosenblum, Ruth - *Associate Professor and Program Coordinator of Northern Consortium, Nursing* (2006)

BS, University of Wisconsin

MS, Northwestern University

DNP, University of San Francisco

Rosenfeld, Liat - *Assistant Professor, Chemical & Materials Engineering (2015)*

BS, MS, and PhD, Israel Institute of Technology, Israel

Ross, Susan - *Assistant Professor, Coordinator of Recreation Therapy, and Coordinator of Complementary and Alternative Medicine, Public Health and Recreation (1999)*

PhD, California Institute of Integral Studies

Rostankowski, Cynthia - *Associate Professor and Coordinator of Humanities Honors and Advanced Honors Programs, Humanities (1987)*

PhD, Stanford University

Roth, Jonathan - *Professor and Director of the Burdick Military History Project, History (1994)*

BA, University of California, Berkeley

MA and PhD, Columbia University

Rouse, Wendy - *Professor and Coordinator of Social Science Teacher Preparation Program, History (2012)*

BA and MA, California State University, Sacramento

PhD, University of California, Davis

Roy, Mantra - *Senior Assistant, University Library (2019)*

PhD, University of South Florida

Rudy, Preston - *Assistant Professor, Sociology & Interdisciplinary Social Sciences (2004)*

BA, University of Texas, Austin

MA and PhD, University of California, Davis

Ruiz, Dora - *Director of Resources & Operations, College of Business (2002)*

BS, San Jose State University

Ruiz Duarte, Jose - *Assistant Professor, Marketing and Business Analytics (2020)*

PhD, University of Arizona

Russell, William - *Professor, Environmental Studies (2004)*

BS, University of California, Santa Cruz

MS, San Jose State University

PhD, University of California, Berkeley

Ryan, Charles - *Director of Track/Field/Cross Country, Women's Cross Country (2021)*

BA, University of South Carolina, Union

Ryan, Tricia - *Director, Graduate Admissions and Program Evaluation (2005)*

BA, San Francisco State University

MS, California State University

MA, San Jose State University

S

Sabalius, Romey - *Professor, World Languages and Literatures* (1995)

PhD, University of Southern California

Saldamli, Gokay - *Assistant Professor, Computer Engineering* (2016)

PhD, Oregon State University

Saleem, Mohammad - *Professor, Mathematics* (1990)

PhD, University of California, Davis

Samuelson, Cheyla - *Associate Professor, World Languages and Literatures* (2014)

PhD, University of California, Santa Barbara

San Fratello, Virginia - *Associate Professor, Design* (2010)

MA, Columbia University

San Nicolas-Rocca, Tonia - *Associate Professor, School of Information* (2013)

BA and MBA, California State University, San Bernardino

PhD, Claremont Graduate University

Sanchez, Carlos - *Professor, Philosophy* (2000)

BS, San Jose State University

PhD, University of New Mexico

Sanchez, Jeffrey - *General Manager, Golf Complex* (2020)

BA, Wofford College

Sanfilippo, Bradley - *Head Coach, Baseball* (2012)

BA, University of California, Davis

Santos, Michael - *Administrative Service Police Lieutenant, UPD Field Operations* (1998)

BA, San Jose State University

Sasaki, Blake - *Senior Associate Athletics Director for External Relations, External Athletic Operations* (2013)

BA, University of California, Davis

MA, Ohio University

Sasikumar, Karthika - *Professor, Political Science* (2009)

MA, Jawaharlal Nehru University, India

MA, English and Foreign Language University, India

PhD, Cornell University

Sasso, Barbara - *Research Development Specialist, Research Development* (2021)

Sauzade, Alena - *Art Gallery Director and Collections Manager, Art and Art History* (2020)

BA, Mills College

PhD, State University of New York, Stony Brook

Saxena, Navrati - *Assistant Professor, Computer Science* (2020)

BS, Kanpur University, India

MS, Agra University, India

PhD, Università di Trento, Italy

Schettler, Jordan - *Assistant Professor, Mathematics* (2015)

BS, University of Tennessee

PhD, University of Arizona

Schmidt, Teresa - *University Bursar, Bursar's Office* (2019)

BBA, Ohio University

MBA, Ashland University

Schultz-Krohn, Winifred - *Professor, Occupational Therapy* (2022)

MA, Saint Thomas Seminary

PhD, Saybrook Institute

Schuster, David - *Associate Professor, Psychology* (2013)

BA, University of Tampa

MA and PhD, University of Central Florida

Sclafani, Jennifer - *Director, Enrollment Services Technical Implementation and Communication* (2006)

MA and MS, San Jose State University

Scott, Kohar - *Assistant Professor, Design* (2015)

BS, Art Center College of Design

MA, San Francisco State University

Seah, Diana - *Associate Professor, Design* (2002)

- MA, Iowa State University
- Selvaduray, Guna - *Professor and Chair, Biomedical Engineering* (1978)
- BE, Tokyo Institute of Technology, Japan
- MS and PhD, Stanford University
- Semerjian, Tamar - *Professor and Chair, Kinesiology* (2007)
- BA, University of California, Berkeley
- MA and PhD, University of Iowa
- Sen, Soma - *Professor, School of Social Work* (2007)
- MSW, University of Minnesota, Twin Cities
- PhD, Arizona State University
- Senn, Laura - *Assistant Professor, Nursing* (2021)
- PhD, University of Minnesota Twin Cities
- Sequeira, Emmanuel - *Assistant Professor, Accounting and Finance* (2020)
- BS, Metropolitan State University of Denver
- MS and PhD, University of Texas, El Paso
- Serrato-Lager, Lucila (Lucy) - *Associate Director of Financial Aid Operations, Financial Aid and Scholarships* (2003)
- BS, Menlo College
- Sexton, Randall - *Professor, Design* (1986)
- BFA, University of Washington
- Sexton, Victoria - *Interim Student Affairs Case Manager, Student Services* (2020)
- BA, University of Iowa
- MS, University of Central Missouri
- Seymour, Chafin - *Assistant Professor, Music and Dance* (2019)
- MFA, University of Iowa
- Shaffer, Scott - *Professor, Biological Sciences* (2009)
- BS, San Diego State University
- MS and PhD, University of California, Santa Cruz
- Shams, Shayan - *Assistant Professor, Applied Data Science* (2021)
- PhD, Louisiana State University, Shreveport
- Sharifi, Mojtaba - *Assistant Professor, Mechanical Engineering* (2022)

- BSc, Shiraz University, Iran
- MSc and PhD, Sharif University of Technology, Iran
- Shay, Christopher - *Senior Director of Real Estate, Facilities Planning* (2021)
- MA, Michigan State University
- Shi, Tianqin - *Associate Professor, Global Innovation and Leadership* (2015)
- PhD, University of Illinois at Urbana-Champaign
- Shillington, Audrey - *Dean, College of Health & Human Science* (2020)
- PhD, Washington University
- Shim, Sang - *Professor, Computer Engineering* (1997)
- PhD, University of Minnesota, Twin Cities
- Shirani, Ashraf - *Professor, Information Systems and Technology* (2000)
- MBA, University of Ark, Fayetteville
- PhD, University of Mississippi
- Shiverdecker, Adam - *Assistant Professor, Art and Art History* (2015)
- MFA, University of South Carolina
- Shoemaker, Emily - *Director of Development, COS, Development Univ Advancement* (2016)
- BA, Sacramento State University
- Shojaei, Rahimeh - *Assistant Professor, Film and Theatre* (2020)
- ABD - Texas Tech University
- MA, Savannah State College
- Shukla, Namrata - *Interim Dean, College of Professional and Global Education* (2008)
- BA, University of Delhi, India
- MBA, University of Houston
- Sibley, Robert - *Associate Professor, Marketing and Business Analytics* (2002)
- PhD, Georgia State University
- Siebert, Erin - *Assistant Professor, Kinesiology* (2017)
- BS and MS, University of Wisconsin
- MPH and PhD, Oregon State University
- Silberman, Shai - *Director, Network Services* (2013)
- MBA, San Jose State University

Simic, Slobodan - *Professor, Mathematics* (2004)

PhD, University of California, Berkeley

Simon, Melinda - *Assistant Professor, Biomedical Engineering* (2017)

BS, University of Cincinnati

MS, University of California, Davis

PhD, University of California, Irvine

Simpson, Craig - *Associate Librarian, University Library* (2017)

MA, Marquette University

Simpson, Lisa - *Associate Professor, Special Education* (2014)

BS and MED, Texas Tech University

EDD, University of San Francisco

Singhal, Sonia - *Assistant Professor, Biological Sciences* (2020)

PhD, University of Washington

Singmaster, Karen - *Professor and Chair, Chemistry* (1988)

BS, University of Puerto Rico, Puerto Rico

PhD, University of California, Berkeley

Sirkeci, Birsan - *Professor, Electrical Engineering* (2007)

BS, Middle East Technical University, Turkey

MS, Northeastern University

PhD, Cornell University

Skinnell, Ryan - *Associate Professor and Assistant Writing Program Administrator, English* (2015)

BA, University of California, Santa Barbara

MA, California State University, Northridge

PhD, Arizona State University

Skovran, Elizabeth - *Associate Professor, Biological Sciences* (2012)

PhD, University of Wisconsin, Madison

Slusser, Emily - *Associate Professor and Chair, Child and Adolescent Development* (2012)

BA, MA, and PhD, University of California, Irvine

Smallwood, Christopher - *Assistant Professor, Physics and Astronomy* (2018)

BA, Harvard University

MA and PhD, University of California, Berkeley

Smallwood, Evan - *Director of Development, College of Social Sciences, Development Unit Advancement* (2019)

BA, University of Mary Washington

Smith, Grinnell - *Professor, Teacher Education* (2006)

PhD, University of Alabama

Smith, Jerilyn - *Associate Professor and Chair, Occupational Therapy* (2003)

BS and MS, San Jose State University

PhD, Trident University

Smith, Maureen - *Professor, Child and Adolescent Development* (1999)

BA, University of California, Davis

MA and PhD, Cornell University

Smith, Michelle - *Director of Corporate and Foundation Relations, University Advancement* (2019)

BA, Santa Clara University

MPA, California State University, East Bay

Smith, Sarah - *Assistant Professor, Moss Landing Marine Laboratories* (2021)

BS, Santa Clara University

MS, Moss Landing Marine Laboratories, SJSU

PhD, University of California, San Diego

Smith McDonald, Michelle - *Senior Director of Media Relations, Strategic Communications and Marketing* (2022)

BA, San Jose State University

Snycerski, Susan - *Professor, Psychology* (2005)

BA, Central Michigan University

MA and PhD, Western Michigan University

So, Wasin - *Professor, Mathematics* (2000)

BS and MA, University of Hong Kong, Hong Kong

PhD, University of California, Santa Barbara

Soehartono, Ruddy - *Senior Director, Customer Service* (2021)

BS, San Francisco State University

Soldofsky, Alan - *Professor and Director of Creative Writing, English* (1985)

MFA, University of Iowa

Sorkhabi, Nadia - *Professor, Child and Adolescent Development* (2007)

PhD, University of California, Berkeley

Sosa, Sylvia - *Contract Manager, Procurement* (2005)

BS, San Jose State University

Soto, Julio - *Professor, Biological Sciences* (1999)

PhD, University of California, Berkeley

Spangler, Matthew - *Professor, Communication Studies* (2005)

BS, Northwestern University

MA, Trinity College Dublin, Ireland

PhD, University of North Carolina at Chapel Hill

Spitzer, Julie - *Professor, Mathematics* (2000)

PhD, University of North Carolina at Chapel Hill

Stamp, Mark - *Professor, Computer Science* (2002)

BS, Morningside College

PhD, Texas Tech University

Stanton, Liam - *Assistant Professor, Mathematics* (2018)

PhD, Northwestern University

Stasiewicz, Amanda - *Assistant Professor, Environmental Studies* (2020)

BS, Siena College

MS and PhD, University of Idaho

Stemwedel, Janet - *Professor, Philosophy* (2002)

PhD, Stanford University

Stenberg, Joseph - *Assistant Professor, Philosophy* (2019)

PhD, University of Colorado at Boulder

Stenmark, Lisa - *Professor, Humanities* (2021)

PhD, Vanderbilt University

Stephens, Michael - *Professor, School of Information* (2011)

BA and MLS, Indiana University

PhD, University of North Texas

Stewart, Nancy - *Senior Director, Annual Giving* (2003)

BA, Santa Clara University

Stirling, Jennifer - *Associate Vice President, Development University Advancement* (2022)

MA, Santa Clara University

Stork, Nancy - *Professor, English* (1994)

PhD, University of Toronto, Canada

Stroh, Patricia - *Librarian, Beethoven Center* (1986)

BM, University of Illinois at Urbana-Champaign

MA, Univ of California, Berkeley

Struer, Amanda - *Director for Advancement Research and Prospect Management, Advancement and Campaign Operations* (2014)

BA, Copenhagen Business School

MA, Temple University

Su, Xiao - *Associate Dean for Graduate Studies and Research, College of Engineering* (2020)

PhD, University of Illinois at Urbana-Champaign

Sugerman, Gabriella - *Assistant Professor, Biomedical Engineering* (2024)

PhD, University of Texas at Austin

Sullivan-Green, Laura - *Professor and Chair, Civil and Environmental Engineering* (2008)

BS, University of Dayton

MS and PhD, Northwestern University

Sunseri, Charlotte - *Associate Professor, Anthropology* (2011)

PhD, University of California, Santa Cruz

Svec, Adam - *Assistant Professor, Audiology* (2020)

PhD, University of Minnesota, Twin Cities

Svorou, Soteria (Roula) - *Associate Dean, SSAP, College of Humanities and Arts* (1990)

BA, University of Athens, Greece

MA and PhD, State University of New York, Buffalo

Swan, Julia - *Assistant Professor, Linguistics and Language Development* (2017)

PhD, University of Chicago

Swanson, Patricia - *Professor and Chair, Teacher Education* (1997)

PhD, Stanford University

Sweet, Elizabeth - *Assistant Professor, Sociology & Interdisciplinary Social Sciences* (2017)

BA, Oregon State University

MA and PhD, University of California, Davis

Switz, Neil - *Associate Professor, Physics and Astronomy* (2016)

PhD, University of California, Berkeley

Szydlowski, Nicholas - *Senior Assistant Librarian, University Library* (2021)

BA, Yale University

MS, Simmons University

T

Tahsin, Salman - *Assistant Professor, Accounting and Finance* (2019)

PhD, University of Arkansas, Fayetteville

Talley, Joni - *Interim Senior Associate Registrar, Office of the Registrar* (2006)

MA, California State University, Fullerton

Tamasese, Travis - *Director of Strategy and Policy, Office of the President* (2021)

BA, California State University, Fullerton

Tan, Edwin - *Director of Advocacy and Community, Community and Government Relations* (2020)

BA, University of California, Riverside

MA and PhD, University of California, Irvine

Tanner-Mathews, Sarah - *Assistant Director, Housing Coordination* (2018)

BS, Northern Arizona University

Taylor, David - *Associate Professor, Computer Science* (2002)

PhD, University of California, Los Angeles

Taylor, Jeffrey - *Construction Manager, M&O Project Management* (2005)

Taylor, Nicholas - *Professor and Director of Martha Heasley Cox Center for Steinbeck Studies, English* (2007)

MFA, University of Virginia

Taylor Siegel, Matthew - *Senior Director of Development for the College of Humanities and the Arts, University Advancement* (2016)

BS, Santa Clara University

Teniente-Matson, Cynthia - *President, Office of the President* (2023)

EdD, California State University Fresno

Terrill, Roger - *Associate Professor, Chemistry* (1998)

BA, University of California, Santa Cruz

MS, Fresno State University

PhD, University of North Carolina

Thiele, Megan - *Associate Professor, Sociology & Interdisciplinary Social Sciences* (2013)

PhD, University of California, Irvine

Thienes, Benjamin - *Assistant Athletics Director for Football Operations, Football* (2017)

MS, Boise State University

Thompson, Gisi - *Interim Associate Director, Student Conduct and Ethical Development* (2014)

BS, University of Florida

MA, University of Central Florida

Thompson, Mark - *Associate Professor and Director of Professional and Technical Writing Program, English* (2013)

PhD, Carnegie Mellon University

Thompson, Wendy M. - *Assistant Professor, African American Studies* (2018)

PhD, University of Maryland, College Park

Thompto, Chelsea - *Assistant Professor, Art and Art History* (2020)

BFA, University of Iowa

MFA, University of Wisconsin, Madison

Tian, Shaonan - *Associate Professor, Marketing and Business Analytics* (2013)

PhD, University of Cincinnati

Tian, Yao - *Associate Professor, Accounting and Finance* (2012)

BS, University of Saskatchewan, Canada

PhD, University of Waterloo, Canada

Tien, Shu-Hwa Sara - *Nurse Manager, Student Wellness Center* (2019)

MPH, University of Texas Health Science Center at Houston

Tillinghast, Diana - *Professor, Journalism and Mass Communications* (1983)

PhD, Michigan State University

Tiomkin, Stanislav - *Assistant Professor, Computer Engineering* (2021)

MSc, Technion - Israel Institute of Technology, Israel

BSc and PhD, The Hebrew University of Jerusalem, Israel

To, Trang - *Assistant Director for General Accounting, Accounting Services* (1998)

BS, San Jose State University

Todd, Anne Marie - *Associate Dean for Academic Programs, College of Social Sciences* (2002)

BA, Emory University

MA and PhD, University of Southern California

Tohidi, Ali - *Assistant Professor, Mechanical Engineering* (2020)

PhD, Clemson University

Tokunaga, Howard - *Professor, Psychology* (1989)

PhD, University of California, Berkeley

Tortora, Cristina - *Assistant Professor, Mathematics* (2016)

PhD, University of Naples Federico II, Italy

Tran, Ngoc-Yen - *Associate Librarian, University Library* (2016)

MS, University of Washington

Trask, Jessica - *Director of Research Compliance, Office of Research* (2021)

PhD, Columbia College, Columbia

Trulio, Lynne - *Professor and Chair, Environmental Studies* (1991)

BA, Goucher College

PhD, University of California, Davis

Tsai, Chia - *Associate Director of Planning, Facilities Planning* (2016)

BS, University of San Francisco

MED, San Francisco State University

Tsai, Kim - *Assistant Professor, Child and Adolescent Development* (2017)

BA, University of California, Santa Cruz

PhD, University of California, Los Angeles

Tsai, Pei-Tzu - *Associate Professor, Communicative Disorders & Sciences* (2011)

BA, National Chengchi University, Taiwan

MA and PhD, University of Maryland, College Park

Tsao, Jacob - *Professor, Industrial and Systems Engineering* (2018)

BA, National Chiao-Tung University, Taiwan

MS, University of Texas, Dallas

PhD, University of California, Berkeley

Tucker, Virginia - *Associate Professor, School of Information* (2005)

BA, Stanford University

MLS, University of California, Berkeley

PhD, Queensland University of Technology, Australia

Tumaka, Kamillah - *Associate Director of Campus Wellness Education, Wellness & Health Promotion* (2022)

MPA, National University

Turner, Peter - *Head Softball Coach* (2006)

MBA, Hamilton University

Tzeng, Christina - *Assistant Professor, Psychology* (2020)

BA, Columbia University

MA and PhD, Emory University

U

Ukil, Patralekha - *Assistant Professor, Economics* (2020)

BS, Presidency College

MS, University of Warwick

PhD, University of Connecticut

Uresti, Aubrey - *Assistant Professor, Counselor Education* (2020)

BA, San Francisco State University

MA, Saint Mary's College

PhD, University of California, Davis

Uribe, Gary - *Head Athletic Performance Coach, Strength and Conditioning* (2013)

MS, Azusa Pacific University

Urrutia, Dominic - *Assistant Athletics Director for Development, External Athletic Operations* (2015)

BS and MA, San Jose State University

Uryu, Michiko - *Assistant Professor and Japanese Advisor, World Languages and Literatures* (2019)

PhD, University of California, Berkeley

V

Vagenas, Panagiotis - *Research Development Specialist, Office of Research* (2020)

MPH, Yale University

PhD, Imperial College London, England

Vaidya, Anand - *Professor and Director of the Center for Comparative Philosophy, Philosophy* (2005)

BA, University of California, Los Angeles

PhD, University of California, Santa Barbara

Valero Pérez, Mario Miguel - *Assistant Professor of Wildfire Behavior and Remote Sensing* (2021)

MS, Universidad Politécnica de Madrid

MS and PhD, Universitat Politècnica de Catalunya

Van Selst, Mark - *Professor, Psychology* (1997)

BA, University of British Columbia, Canada

MA and PhD, University of Waterloo, Canada

Van Wyngarden, Annalise - *Associate Professor, Chemistry* (2009)

BA and BS, Hope College

PhD, University of California, Berkeley

Vang, Chao - *Associate Director, Institutional Research* (2007)

BA, California State University, Sacramento

VanHoven, Miri - *Associate Dean for Research, College of Science* (2008)

BA, Pomona College

PhD, University of California, San Francisco

Vanniarajan, Swathi - *Professor, Linguistics and Language Development* (1995)

MLitt, Central Institute of English & Foreign Languages, India

MA, Ottawa University, Canada

PhD, University of California, Los Angeles

Vartan, James (Brad) - *Senior Director of Develop Business, Development University Advancement* (2015)

BA, Columbia College

Vasquez, Anita - *Senior Director, Benefits and Payroll, University Personnel* (1995)

Vasquez, Nathan - *Associate Director, Maintenance and Operations* (2013)

Vega, Christine - *Assistant Professor, Chicana and Chicano Studies* (2021)

AA, Los Angeles Mission College

MEd, University of Utah

BA and PhD, University of California, Los Angeles

Vera Sanchez, Claudio - *Associate Professor, Justice Studies* (2008)

BA, California State University, Long Beach

MA and PhD, University of Illinois at Chicago

Verducci -Sandford, Susan - *Professor, Humanities* (2004)

BFA, University of California, Santa Barbara

MFA, Rutgers University

MA and PhD, Stanford University

Vergine, Fabrizio - *Assistant Professor, Aerospace Engineering* (2017)

BS and MS, University of Rome, Italy

PhD, University of Texas, Arlington

Vickerman, David - *Associate Professor, Music and Dance* (2017)

BM, CSU Stanislaus

MM, Oregon State University

DMA, John Hopkins University

Villagran, Michele - *Assistant Professor, School of Information* (2018)

BS, University of Nevada, Las Vegas

MMLS and MBA, University of North Texas

MDR and DED, Pepperdine University

Villagrana, Jose - *Assistant Professor, English* (2019)

PhD, University of California, Berkeley

Villavelazquez- Hill, Ignacia - *Interim Director, Accessible Education Center* (2005)

BA, University of California, Santa Cruz

MA, San Jose State University

Vinuales, Gema - *Assistant Professor, Marketing and Business Analytics* (2019)

PhD, University Of Rhode Island

Viswanathan, Vimal Kumar - *Associate Professor and Chair, Mechanical Engineering* (2016)

BTech, National Institute of Technology, India

MS and PhD, Texas A&M University

Virick, Meghna - *Associate Dean of Undergraduate Programs, College of Business* (2005)

MBA, Texas Christian University

PhD, University of Texas, Arlington

Visintainer, Tammie - *Assistant Professor, Teacher Education* (2017)

BS, University of Wisconsin, Madison

MS, San Francisco State University

PhD, University of California, Berkeley

Vizzusi, Michael - *Assistant Director, Budget Planning and Financial Management* (2017)

BBA, San Jose State University

Vogel, Julian Ulrich Norbert - *Assistant Professor, Accounting and Finance* (2021)

MBA, Murray State University

Voss Plaxton, Catherine - *Associate Vice President for Health, Wellness and Student Services* (2014)

BA, University of Michigan, Ann Arbor

MA, University of San Francisco

Vukazich, Steven - *Professor, Civil and Environmental Engineering* (1993)

BA, University of California, Davis

MA, University of California, Berkeley

PhD, University of California, Davis

W

Wagle, Ashwini - *Professor, Chair, Nutrition, Food Science and Packaging* (2003)

MS, Indiana University of Pennsylvania

EdD, University of New England

Wallace, Danielle - *Director, Administrative Services* (2014)

ABA, Las Positas College

Waller, Michael - *Senior Associate Athletic Director, Business Operations* (2015)

BS, Central Missouri State University

Walsh, Elizabeth - *Associate Professor, Meteorology and Climate Science* (2012)

BS, Harvey Mudd College

MS and PhD, University Of Washington

Wang, Chunlei - *Associate Professor, School of Management* (2008)

PhD, Stanford University

Wang, Haonan - *Assistant Professor, Computer Engineering* (2020)

PhD, Marymount University

Wang, Ningkun - *Assistant Professor, Chemistry* (2017)

BS, University of Utah

PhD, University of Michigan, Ann Arbor

Wang Tung, Wei-Chen - *Professor, Nursing* (2020)

PhD, University of Utah

Wang, Yun - *Assistant Professor, Biomedical Engineering* (2020)

PhD, Michigan State University

Ward, Douglas - *Director of Financial Planning and Analysis* (2019)

MS, University of Wisconsin

Ward, Ryan - *Director of Advocacy and Federal Relations, Community and Government Relations* (2020)

BA, Willamette University

JD, University of Washington

Warner, Mary - *Professor, English* (2004)

BA, Mount Mary College

MA, Creighton University

PhD, University of Michigan

Warren, Jodie-Ann - *Assistant Professor, Justice Studies* (2019)

BSc, MS and PhD, Simon Fraser University, Canada

Watson, Wanda - *Associate Professor, Teacher Education* (2021)

MA and BS, Stanford University

EdD, Teachers College At Columbia University

Weaver, Kristen - *Student Affairs Case Manager, Student Services* (2021)

MA, Bowling Green State University

Wei, Belle - *Professor, Interdisciplinary Engineering* (1987)

PhD, University of California, Berkeley

Wei, Wenbin - *Professor and Director, Aviation* (2003)

PhD, University of California, Berkeley

Weiler, Luke - *Assistant Professor, Accounting and Finance* (2020)

MSBA and MAcc, University of Arkansas, Fayetteville

PhD, Michigan State University

Weiss, Elizabeth - *Professor, Anthropology* (2004)

BA, University of California, Santa Cruz

MA, California State University, Sacramento

PhD, University of Ark, Fayetteville

Wesley, Leonard - *Associate Professor, Computer Science* (1995)

PhD, University of Massachusetts, Amherst

West-Johnson, Phylis - *Professor and Director, Journalism & Mass Communications* (2016)

PhD, Southern Illinois University

West, Sara - *Assistant Professor, English* (2018)

PhD, University of Arkansas

Westlake, Bryce - *Associate Professor, Justice Studies* (2015)

BA, University of British Columbia

MA and PhD, Simon Fraser University, Canada

Wharton, Kenneth - *Professor, Physics and Astronomy* (2001)

BA, Stanford University

PhD, University Of California, Los Angeles

White, Brandon - *Professor, Biological Sciences* (2007)

BS, Auburn University

PhD, University of Alabama, Birmingham

Whitenack, David - *Professor, Teacher Education* (1996)

AB, Dartmouth College

EdM, Harvard University

PhD, Stanford University

Whitney, Robin - *Assistant Professor, Nursing* (2019)

BA, Bowdoin College

BS, University of Southern Maine

PhD, University of California, Davis

Widaman, Adrienne - *Associate Professor, Nutrition, Food Science and Packaging* (2016)

BS and PhD, University of California, Davis

Wiggins, Yolanda - *Assistant Professor, Sociology and Interdisciplinary Social Sciences* (2020)

BA, West Virginia University

MA and PhD, University of Massachusetts, Amherst

Wilkin, Katherine - *Assistant Professor, Biological Sciences* (2020)

BS and MS, California Polytechnic State University-San Luis Obispo

PhD, University of California, Berkeley

Wilkinson, Katherine - *Associate Professor, Biological Sciences* (2020)

BA and BS, University of Pittsburgh

PhD, University of California, San Diego

Williams, Anthony - *Assistant Professor, Kinesiology* (2021)

BS, Western Illinois University

PhD, Florida State University

Williams, Jahmal - *Director of Advocacy, Community and Government Relations* (2014)

BA, University of Michigan, Ann Harbor

MSW, Michigan State University

Wolcott, Abraham - *Assistant Professor, Chemistry* (2015)

BS and PhD, University of California, Santa Cruz

Wolcott, Gregory - *Associate Vice President for Student Success* (2001)

MA, Ohio University

DED, University of California, San Francisco

Wolf, Jennifer - *Associate Professor, School of Social Work* (2020)

MSW and PhD, University of California, Berkeley

Wong, Alan - *Senior Director, Business Development and Global Partnership, Business Development and External Relation* (2014)

BS, San Jose State University

PhD, University of California, Davis

Wong, Heidi - *Director for Budgeting Planning, Academic Business and Startegic Operations* (2002)

AA, De Anza College

Wong, Hiu Yung - *Assistant Professor, Electrical Engineering* (2018)

BE and MA, Chinese University of Hong Kong, Hong Kong

PhD, University of California, Berkeley

Wong, Vivian - *Professor and Director of the Wound and Ostomy Education Program, Nursing* (2005)

BS, University of Texas, Arlington

MS, University of Florida

PhD, University of California, San Francisco

Wood, Andrew - *Professor, Communication Studies* (1998)

BA, Berry College

MA and PhD, Ohio University

Wood, April - *Assistant Professor, Nursing* (2007)

BS and BSN, University of Iowa

MS, San Jose State University

DNP, American Sentinel University

Wood, Mike - *Assistant Professor, Moss Landing Morine Labs and Computer Science* (2023)

PhD, University of California, Irvine

Wood, Robert - *Professor, School of Management* (2001)

BA, Williams College

DBA, Boston University

Woodhead, Erin - *Associate Professor, Psychology* (2012)

BS, Pennsylvania State University

MS and PhD, West Virginia University

Worthen, Miranda - *Associate Professor, Public Health and Recreation* (2012)

BA, Harvard University

MA, Oxford University

PhD, University of California, Berkeley

Wright, Christie - *Director of Graduate Enrollment, Graduate Enrollment Management (2010)*

BA, Averett College

MA, University of Texas, Arlington

Wright, Joanne - *Senior Associate Vice President, University Personnel (2015)*

BA, University of California, Santa Cruz

JD, Rutgers University, Camden

Wright, Shannon - *Professor and Program Coordinator, Art and Art History (2002)*

BFA, School of the Art Institute of Chicago

MFA, Virginia Commonwealth University

Wright, Sonia - *Senior Director of Development for the College of Health and Human Sciences, Development University Advancement (2014)*

MA, University of Oregon

Wu, Angela - *Assistant Professor, Design (2010)*

BA, University of California, Berkeley

MA, San Jose State University

Wu, Ching-seh - *Assistant Professor, Computer Science (2018)*

MS, Air Force Institute of Technology

PhD, Texas A&M University

Wu, Yan - *Associate Professor, Global Innovation and Leadership (2019)*

PhD, Pennsylvania State University

Wu, Wencen - *Associate Professor, Computer Engineering (2018)*

BS and MS, Shanghai Jiao Tong University, China

MS and PhD, Georgia Institute of Technology

Wughalter, Emily - *Professor, Kinesiology (1991)*

BA, Herbert H. Lehman College

MS, University of Colorado

DED, University of Georgia

X

Xiao, Fangjun - *Assistant Professor, Accounting and Finance* (2019)

PhD, Washington State University

Y

Yagci Sokat, Kezban - *Assistant Professor, Marketing and Business Analytics* (2020)

BS, Istanbul Technical University, Turkey

PhD, Northwestern University

Yan, David - *Assistant Professor, Technology* (2017)

BE and MA, Auckland University of Technology, New Zealand

PhD, Deakin University, Australia

Yanai, Yasue - *Professor, Coordinator, and Advisor for Japanese Program, World Languages and Literatures* (2009)

BA and MA, Ochanomizu Women's University, Japan

PhD, Georgetown University

Yang, Bo - *Assistant Professor, Urban & Regional Planning* (2021)

BS, Shaanxi Normal University, China

MS, Capital Normal University, China

MA and PhD, University of Cincinnati

Yang, Minji - *Counselor I, Counseling and Psychological Services* (2017)

PhD, University of Maryland, College Park

Ybarra, Barbara - *Director of Development for the College of Education* (2020)

BA and MBA, University of California, Santa Barbara

Yeboah, Nikki - *Assistant Professor, Communication Studies* (2016)

PhD, Northwestern University

Yee, David - *Assistant Professor, Design* (2007)

BS, San Jose State University

MFA, University of Hartford

Yee, Raymond - *Professor, Engineering Off-Campus Programs* (2000)

BS, California Polytechnic State University, San Luis Obispo

MS and PhD, University of California, Berkeley

Yellamsetty, Anusha - *Assistant Professor, Doctor of Audiology Program* (2021)

PhD, The University of Memphis

Yen, Tsu-Hong - *Professor and Chair, Hospitality, Tourism and Event Management* (2002)

PhD, University of Illinois, Urbana-Champaign

Yu, Weider - *Professor, Computer Engineering* (2002)

PhD, Northwestern University

Yuan, Yue - *Assistant Professor, Justice Studies* (2016)

PhD, Indiana University, Bloomington

Z

Zandiatashbar, Ahoura - *Assistant Professor, Urban and Regional Planning* (2020)

BA, Shiraz Azad University, Iran

MS, Rensselaer Polytechnic Institute

PhD, University of Texas, Arlington

Zarate, Arthur - *Assistant Professor, Humanities* (2019)

BA, University of Wisconsin

PhD, MPhil and MA, Columbia University in New York

Zargar, Ali - *Professor, Technology* (2018)

PhD, Stanford University

Zartoshty, Parinaz - *Director, International Student and Scholar Services* (2018)

BA, Cornell University

MA, Boston University

EDD, San Jose State University

Zhang, Ni (Jennie) - *Assistant Professor, Public Health and Recreation* (2015)

PhD, University of Iowa

Zhang, Nicole - *Assistant Professor, Nursing* (2021)

PhD, Suny at Binghamton

Zhang, Jian - *Professor, Accounting and Finance* (2006)

PhD, Arizona State University

Zhang, Jing - *Professor, Marketing and Business Analytics* (2011)

PhD, University of Illinois at Urbana-Champaign

Zhang, Yan - *Assistant Professor, Mathematics* (2016)

BA, Harvard University

PhD, Massachusetts Institute of Technology

Zhao, Juzi - *Assistant Professor, Electrical Engineering* (2017)

PhD, George Washington University

Zhou, Ming - *Professor, Global Innovation and Leadership* (2006)

PhD, University of Maryland, College Park

Zhou, Shu - *Associate Professor, Global Innovation and Leadership* (2007)

PhD, Cornell University

Zhou, Mi - *Assistant Professor, Nutrition, Food Science, and Packaging* (2022)

PhD, Virginia Tech

Zipp, Robert - *Leadership Annual Giving Officer, Alumni and Community Personnel* (2019)

BA, Swarthmore College

Emeritus Faculty and Staff

Year in parentheses indicates date of retirement of the faculty or staff member.

A

Abriam-Yago, Katherine - *Emeritus Faculty*, Nursing (2018)

Acrivos, Juana - *Emeritus Faculty*, Chemistry (2006)

Adams, Michael - *Emeritus Faculty*, Film and Theatre (2013)

Adelman, Toby - *Emeritus Faculty*, Nursing (2019)

Ahlquist, Roberta - *Emeritus Faculty*, Teacher Education (2017)

Aitken, Don - *Emeritus Faculty*, Environmental Studies (1981)

Albers, Patricia - *Lecturer Emerita*, Art and Art History (2019)

Allmen, Cheryl - *Emeritus Staff*, Career Center (2012)

Alperin, Roger - *Emeritus Faculty*, Mathematics (2016)

Amiras, Mira - *Emeritus Faculty*, Humanities (2013)

Anagnos, Thalia - *Emeritus Faculty*, Interdisciplinary Engineering (2023)

Andersen, David - *Emeritus Faculty*, Geology (2018)

Anderson, Jennifer - *Emeritus Faculty*, Anthropology (2020)

Anthrop, Donald - *Emeritus Faculty*, Geography (2006)

Antoine, Rosa - *Emeritus Staff*, Computer Engineering (2017)

Antokal, Gale - *Emeritus Faculty*, Art and Art History (2019)

Alvarez, Mildred - *Professor Emeritus*, Psychology (2022)

Araya, Agustin - *Emeritus Faculty*, Computer Science (2011)

Arredondo, Elma - *Professor Emeritus*, Information Technology (2022)

Ashton, Sally - *Lecturer Emerita*, English (2019)

Asquith, David - *Emeritus Faculty*, College of Social Sciences (2010)

Austin-Lett, Genelle - *Emeritus Faculty*, College of Social Sciences (2013)

Averett, Janet - *Emeritus Faculty*, Music and Dance (2021)

Avila, John - *Emeritus Faculty*, Computer Science (2007)

B

Bakke, Celia - *Emeritus Faculty*, University Library (2011)

Baldwin, Cecilia - *Emeritus Faculty*, Journalism and Mass Communications (2014)

Barela, Albert - *Emeritus Faculty*, Art and Art History (2005)

Barnes, Judith - *Emeritus Faculty*, Communication Studies (2005)

Baroody-Hart, Cynthia - *Emeritus Faculty*, Justice Studies (2012)

Barozzi, Louie - *Emeritus Staff*, International Student and Scholar Services (2010)

Bates, Seth - *Emeritus Faculty*, Technology (2016)

Bawel-Brinkley, Karen - *Professor Emeritus*, Nursing (2022)

Becker, Joanne - *Emeritus Faculty*, Mathematics (2015)

Becker, Joseph - *Professor Emeritus*, Physics and Astronomy (2013)

Beckett, Alvin - *Emeritus Faculty*, College of Business (2005)

Beeson, Michael - *Emeritus Faculty*, Computer Science (2014)

Belanger, Sandra - *Emeritus Faculty*, University Library (2006)

Belet, Brian - *Emeritus Faculty*, Music and Dance (2020)

Belo, Panfilo - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2014)

Berger, Florie - *Emeritus Faculty*, University Library (2010)

Bernardini, Eugene - *Emeritus Faculty*, Humanities (2007)

Bernhardt, John - *Emeritus Faculty*, History (2016)

Betten, Paul - *Emeritus Faculty*, College of Education (2007)

Bienenfeld, Sheila - *Emeritus Faculty*, Psychology (2015)

Billik, Martin - *Emeritus Faculty*, Mathematics (2007)

Bindal, Ahmet - *Professor Emeritus*, Computer Engineering (2024)

Blitzer, Roy - *Emeritus Faculty*, School of Management (2021)

Block, Joan - *Emeritus Staff*, Sociology and Interdisciplinary Social Sciences (2008)

Bloomer, Iris - *Emeritus Faculty*, Physics and Astronomy (2010)

Blythe, William - *Emeritus Faculty*, Civil and Environmental Engineering (2008)

Boekema, Carolus - *Emeritus Faculty*, Physics and Astronomy (2017)

Bohn, Ralph - *Emeritus Faculty*, Technology (2007)

Boothby, John - *Emeritus Faculty*, Biological Sciences (2015)

Borenstein, Sheldon - *Emeritus Faculty*, Design (2021)

Bornstein, Robert - *Emeritus Faculty*, Meteorology and Climate Science (2010)

Boschken, Herman - *Emeritus Faculty*, School of Management (2014)

Bossard, Earl - *Emeritus Faculty*, Urban and Regional Planning (2010)

Botha, Jan - *Emeritus Faculty*, Civil and Environmental Engineering (2022)

Bowman, Mary - *Emeritus Faculty*, Kinesiology (2006)

Boyacigiller, Nakiye - *Emeritus Faculty*, School of Management (2007)

Brale, Loy - *Emeritus Faculty*, Psychology (2008)

Brannen, Mary - *Emeritus Faculty*, School of Management (2009)

Branz, Stephen - *Emeritus Faculty*, Chemistry (2019)

Briggs, Elizabeth - *Emeritus Faculty*, Design (2022)

Brinegar, Anthony - *Emeritus Faculty*, Biological Sciences (2019)

Brook, Daniel - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2022)

Brook, Sharon - *Emeritus Faculty*, Music and Dance (2020)

Bros, Shannon - *Emeritus Faculty*, Biological Sciences (2017)

Brown, Paul - *Emeritus Faculty*, Recreation and Leisure Studies (2007)

Browne, Clare - *Lecturer Emerita*, English (2019)

Bruck, David - *Emeritus Faculty*, Biological Sciences (2021)

Bryant, James - *Emeritus Faculty*, Kinesiology (2007)

Buell, Cathy - *Emeritus Faculty*, Kinesiology (2011)

Bull, Galen - *Emeritus Faculty*, College of Science (2008)

Bullock, Charles - *Emeritus Faculty*, Public Health and Recreation (2017)

Burak, Marshall - *Emeritus Faculty*, Accounting and Finance (2007)

Burke, Michael - *Emeritus Faculty*, Computer Science (2006)

Burkhard, Richard - *Emeritus Faculty*, Information System and Technology (2020)

Burkom, Selma - *Emeritus Faculty*, English (2007)

Burton, Ester - *University Staff*, Engineering Student Success Center (2019)

Burton, Gordon - *Emeritus Faculty*, Occupational Therapy (2004)

Buzanski, Peter - *Emeritus Faculty*, History (2010)

Byrd, Marquita - *Emeritus Faculty*, Communication Studies (2022)

C

- Calegari, Mary - *Emeritus Faculty*, Accounting and Finance (2020)
- Campbell, Toni - *Professor Emeritus*, Child and Adolescent Development (2023)
- Canham, Daryl - *Professor Emeritus*, Nursing (2022)
- Caohuu, Tri - *Professor Emeritus*, Electrical Engineering (2022)
- Cara, Elizabeth - *Emeritus Faculty*, Occupational Therapy (2017)
- Carlson, Margaret - *Emeritus Staff*, College of Social Sciences (2015)
- Carlson, Steven - *Emeritus Faculty*, Art and Art History (2011)
- Carranza, Elihu - *Emeritus Faculty*, Communication Studies (2011)
- Carroll, Mary - *Emeritus Faculty*, Political Science (2006)
- Carter, Alice - *Emeritus Faculty*, Design (2016)
- Carrasco, Jose - *Emeritus Faculty*, Mexican American Studies (2005)
- Castro, George - *Emeritus Faculty*, Chemistry (2006)
- Cate, Sandra - *Emeritus Faculty*, Anthropology (2015)
- Chang, Ji-Mei - *Emeritus Faculty*, Special Education (2016)
- Chen, Ray - *Emeritus Faculty*, Electrical Engineering (2017)
- Cheng, Guang-Meei - *Emeritus Faculty*, Economics (2016)
- Chiao, Sen - *Professor Emeritus*, Meteorology and Climate Science (2011)
- Chiao, Sun-Hai - *Emeritus Faculty*, Electrical Engineering (2019)
- Chiarito, Robert - *Emeritus Faculty*, Art and Art History (2018)
- Chin, Elaine - *Emeritus Faculty*, Teacher Education (2021)
- Chow, Balance - *Emeritus Faculty*, English (2020)
- Christensen, Carol - *Emeritus Faculty*, Kinesiology (2004)
- Christensen, Terry - *Emeritus Faculty*, College of Social Sciences (2013)
- Chua, Peter - *Professor Emeritus*, Sociology and Interdisciplinary Social Sciences (2022)
- Coale, Kenneth - *Emeritus Faculty*, Moss Landing Marine Lab (2018)
- Coates, Floyd - *Emeritus Faculty*, Art and Art History (2005)
- Cody, Arthur - *Emeritus Faculty*, Philosophy (2007)
- Cohen, Isaac - *Emeritus Faculty*, School of Management (2015)

Cohen, Jayne - *Emeritus Faculty*, Nursing (2018)
Cohen, Kathleen - *Emeritus Faculty*, Art and Art History (2005)
Collins, Gloria - *Emeritus Faculty*, English (2016)
Combs, Howard - *Emeritus Faculty*, Marketing and Business Analytics (2019)
Connell, Elva - *Emeritus Staff*, Psychology (2016)
Conniff, Michael L - *Emeritus Faculty*, History (2017)
Connolly, Phyllis - *Emeritus Faculty*, Nursing (2011)
Conry, Barbara - *Emeritus Faculty*, Kinesiology (2012)
Cook, S D - *Emeritus Faculty*, Philosophy (2015)
Cooper, Robert - *Emeritus Faculty*, Psychology (2016)
Coopman, Ted - *Emeritus Faculty*, Communication Studies (2021)
Corcoran, Gertrude - *Emeritus Faculty*, College of Education (2005)
Cornford, Daniel - *Emeritus Faculty*, History (2010)
Cortez, Debbie - *Emeritus Faculty*, Civil and Environment Engineering (2021)
Cowden, Robert - *Emeritus Faculty*, Music and Dance (2007)
Cox, Bonita - *Emeritus Faculty*, English (2015)
Cross, Sharyl - *Emeritus Faculty*, Political Science (2011)
Crowe, Edith - *Emeritus Faculty*, University Library (2007)
Cullen, Robert - *Emeritus Faculty*, English (2015)
Culley, James - *Emeritus Faculty*, Film and Theatre (2013)
Curry, Cherie - *Emeritus Faculty*, Music and Dance (2006)

D

Danopoulos, Constantine - *Emeritus Faculty*, Political Science (2018)
Daoud, Adnan - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2011)
Darrah, Charles - *Emeritus Faculty*, Anthropology (2020)
David, Debra - *Emeritus Faculty*, Public Health and Recreation (2015)
Davis, Kathryn - *Emeritus Faculty*, Environmental Studies (2022)
Davis, M - *Emeritus Faculty*, Environmental Studies (2022)
Day, Jane - *Emeritus Faculty*, Mathematics (2010)

Decena, Peter - *Chief of Police*, Parking Services (2011)

Delevoryas, John - *Emeritus Faculty*, Music and Dance (2009)

Demers, Anne - *Emeritus Faculty*, Public Health and Recreation (2019)

Desautel, Richard - *Emeritus Faculty*, Aerospace Studies (2004)

Devincenzi, William - *Emeritus Faculty*, Accounting and Finance (2016)

Dietz, Elizabeth - *Emeritus Faculty*, Nursing (2013)

Doi, Steven - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2017)

Don, Patricia - *Emeritus Faculty*, History (2013)

Donnelly, William - *Emeritus Faculty*, Accounting and Finance (2007)

Dorosti, Javad - *Emeritus Faculty*, Interdisciplinary Engineering (2018)

Douglass, Malcolm - *Emeritus Faculty*, English (2019)

Dresser, Rocio - *Emeritus Faculty*, Teacher Education (2018)

Drobot, Vladimir - *Emeritus Faculty*, Computer Science (2007)

E

Earle, James - *Emeritus Faculty*, Film and Theatre (2011)

Eastman, Lucius - *Emeritus Faculty*, College of Humanities and Arts (2010)

Eden, Terri - *Emeritus Staff*, Degree Audit (2016)

Edfelt, Ralph - *Emeritus Faculty*, School of Management (2009)

Edwards, Frances - *Emeritus Faculty*, Political Science (2022)

Eggers, Daryl - *Emeritus Faculty*, Chemistry (2023)

El-Shaieb, Abdel - *Emeritus Faculty*, College of Business (2006)

Elmore, Dana - *Emeritus Faculty*, College of Education (2006)

Empey, John - *Emeritus Staff*, Psychology (2010)

Engell, John - *Emeritus Faculty*, English (2019)

English, Karen - *Emeritus Faculty*, Humanities (2015)

English-Lueck, June - *Professor Emeritus*, Anthropology (1991)

Estabrook, Reed - *Emeritus Faculty*, Art and Art History (2015)

Estill, John - *Emeritus Faculty*, Economics (2022)

Epstein, Karen - *Emeritus Faculty*, Teacher Education (2023)

Evans, Gail - *Emeritus Faculty*, Kinesiology (2013)

Evan, Kathleen - *Emeritus Faculty*, English (2023)

F

Faires, Debra - *Emeritus Faculty*, School of Information (2021)

Fallon, Michael - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2017)

Fanos, Joanna - *Lecturer Emerita*, Psychology (2020)

Fimbel, Nancie - *Emeritus Faculty*, Marketing and Business Analytics (2015)

Fimbres, Manuel - *Emeritus Faculty*, School of Social Work (2019)

Finkelstein, Alan - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2019)

Fisher, William - *Emeritus Faculty*, School of Information (2013)

Fister, A - *Emeritus Staff*, Economics (2015)

Fjelstad, Karen - *Emeritus Faculty*, Anthropology (2016)

Floyd, Karel - *Emeritus Staff*, College of Social Sciences (2018)

Foldvary, Fred - *Emeritus Faculty*, Economics (2019)

Fosdick, Scott - *Emeritus Faculty*, Journalism and Mass Communications (2020)

Foster, Leslie - *Emeritus Faculty*, Mathematics (2015)

Fountain, Anne - *Emeritus Faculty*, World Languages and Literatures (2016)

Fowler, Robert - *Emeritus Faculty*, Biological Sciences (2013)

Frank, Joseph - *Emeritus Faculty*, Music and Dance (2019)

Franks, Joel - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2019)

Freeman, James - *Emeritus Faculty*, Anthropology (2006)

Freeman, James - *Emeritus Faculty*, College of Engineering (2011)

Friebel, Allen - *Emeritus Faculty*, College of Business (2008)

Fruin, William - *Emeritus Faculty*, School of Management (2015)

Furst, David - *Emeritus Faculty*, Kinesiology (2006)

G

Garcia, Julio - *Emeritus Faculty*, Technology (2016)

Garcia, Linda - *Emeritus Staff*, College of Social Sciences (2015)

Garcia, Marshall - *Professor Emeritus*, Art and Art History (2011)

Gasich, Dushan - *Emeritus Faculty*, Information Systems and Technology (2015)

Gayle, Debrayh - *Emeritus Faculty*, Nursing (2019)

Geller, Jonathan - *Emeritus Faculty*, Moss Landing Marine Lab (2021)

George, William - *Emeritus Faculty*, Music and Dance (2005)

Gerami, Shahin - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2022)

Gerstman, Buddy - *Emeritus Faculty*, Public Health and Recreation (2016)

Gifford, Marjorie - *Emeritus Faculty*, Mathematics (2010)

Glancy, Maureen - *Emeritus Faculty*, Recreation and Leisure Studies (2005)

Gleixner, Stacy - *Emeritus Faculty*, Chemical and Materials Engineering (2021)

Glines, Daniel - *Emeritus Faculty*, Kinesiology (2009)

Glogoski, Carolyn - *Emeritus Faculty*, Occupational Therapy (2021)

Goldston, Daniel - *Emeritus Faculty*, Mathematics (2020)

Gonzales, Irene - *Emeritus Faculty*, Nursing (2012)

Goodman, Jindra - *Emeritus Faculty*, Meteorology and Climate Science (2010)

Gorenberg, Bobbye - *Emeritus Faculty*, Nursing (2007)

Gorman, Edward Michael - *Emeritus Faculty*, School of Social Work (2020)

Gorney-Moreno, Mary - *Emeritus Faculty*, Nursing (2010)

Gotliffe, Harvey - *Emeritus Faculty*, Journalism and Mass Communications (2008)

Goyal, Deepika - *Emeritus Faculty*, Nursing (2023)

Granner, John - *Emeritus Faculty*, Design (2016)

Grant, George - *Emeritus Faculty*, English (2007)

Greb, Gordon - *Emeritus Faculty*, Journalism and Mass Communications (2007)

Greene, Herbert - *Emeritus Faculty*, Moss Landing Marine Lab (2006)

Grilione, Patricia - *Emeritus Faculty*, Biological Sciences (2011)

Grindstaff, Beverly - *Emerita Faculty*, Art and Art History (2019)

Guenter, Scot - *Emeritus Faculty*, Humanities (2019)

Guerin, Gilbert - *Emeritus Faculty*, College of Education (2005)

Guerrazzi Martinet, Diane - *Professor Emeritus*, Journalism and Mass Communications (2022)

H

- Haas, Peter - *Emeritus Faculty*, Political Science (2017)
- Habal, Estella - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2014)
- Hadreas, Peter - *Emeritus Faculty*, Philosophy (2021)
- Hagar, Christine - *Emeritus Faculty*, School of Information (2020)
- Hagemann, Janet - *Emeritus Faculty*, Justice Studies (2015)
- Hamann, Eloise - *Emeritus Faculty*, Mathematics (2007)
- Hamill, Patrick - *Emeritus Faculty*, College of Science (2008)
- Hanna, William - *Emeritus Faculty*, Teacher Education (2015)
- Hansen, Debra - *Emeritus Faculty*, School of Information (2019)
- Harden, Deborah - *Emeritus Faculty*, Geology (2006)
- Harper, Victoria - *Emeritus Faculty*, Teacher Education (2007)
- Harris, Edward - *Emeritus Faculty*, Music and Dance (2018)
- Harris, Elizabeth - *Emeritus Faculty*, Communication Studies (2023)
- Harrison, Kelly - *Emeritus Faculty*, English (2020)
- Harvey, James - *Emeritus Faculty*, Moss Landing Marine Lab (2021)
- Hatch, David - *Emeritus Faculty*, Art and Art History (2011)
- Haycock, Kenneth - *Emeritus Faculty*, School of Information (2010)
- Hegstrom, Timothy - *Emeritus Faculty*, Communication Studies (2012)
- Heisch, Allison - *Professor Emerita*, English (2009)
- Heisinger, H. Brent - *Professor Emeritus*, Music and Dance (2007)
- Helgren, David - *Emeritus Faculty*, Geography (2007)
- Helmbold, Lois - *Emeritus Faculty*, College of Social Sciences (2011)
- Henze, Rosemary - *Emeritus Faculty*, Linguistics and Language Development (2018)
- Hernandez, Joanne - *Emeritus Faculty*, Art and Art History (2019)
- Herrold, Rebecca - *Emeritus Faculty*, Music and Dance (2007)
- Hibshoosh, Aharon - *Emeritus Faculty*, Marketing and Business Analytics (2015)
- Hill, Patricia - *Emeritus Faculty*, History (2021)
- Hinerman, Stephen - *Emeritus Faculty*, Communication Studies (2022)

Hines, Alice - *Emeritus Faculty*, School of Social Work (2018)
Ho, Stuart - *Emeritus Staff*, Institutional Research (2018)
Hohmann, Hanns - *Emeritus Faculty*, Communication Studies (2017)
Hollenbeck, Clarie - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2022)
Holley, Daniel - *Emeritus Faculty*, Biological Sciences (2015)
Hollingsworth, Sandra - *Emeritus Faculty*, Teacher Education (2008)
Holmes, Brian - *Emeritus Faculty*, Physics and Astronomy (2018)
Holscher, Louis - *Emeritus Faculty*, Chicana and Chicano Studies (2009)
Horstmann, Cay - *Emeritus Faculty*, Computer Science (2019)
Hsu, Tai-Ran - *Emeritus Faculty*, Mechanical Engineering (2021)
Huebner, Thomas - *Emeritus Faculty*, Linguistics and Language Development (2013)
Hummel, Jeffrey Rogers - *Professor Emeritus*, Economics (2022)
Hung, Donald - *Professor Emeritus*, Computer Engineering (2022)
Hwang, Shirley - *Emeritus Staff*, University Library (2015)
Hyde, Robert - *Emeritus Faculty*, Biological Sciences (2012)

I

Ibrahim, Azmy - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2006)
Ittis, Wilfred - *Emeritus Faculty*, Biological Sciences (2006)
Inghram, Patricia - *Emeritus Staff*, College of Health and Human Sciences (2012)

J

Jackson, Bradley - *Emeritus Faculty*, Mathematics (2019)
Jacobsen, Ruth - *Emeritus Faculty*, School of Social Work (2021)
Jaehne, Dennis - *Emeritus Faculty*, Communication Studies (2020)
Jankovich, J - *Emeritus Faculty*, School of Management (2013)
Jennings, Michael - *Emeritus Faculty*, Chemical and Materials Engineering (2016)
Jerbic, Stephen - *Emeritus Faculty*, Economics (2022)
Jerke, Iris - *Emeritus Faculty*, History (2015)
Jerrell, Stephen - *Emeritus Faculty*, School of Management (2010)

Jiang, William - *Emeritus Faculty*, School of Management (2016)

Jochim, Christian - *Emeritus Faculty*, Humanities (2020)

Johnston, Janet - *Emeritus Faculty*, Justice Studies (2011)

Jones, Curtis - *Emeritus Faculty*, Electrical Engineering (2017)

Jordan, Kevin - *Emeritus Faculty*, Psychology (2015)

Junkerman, Anne - *Emeritus Faculty*, Art and Art History (2020)

Jurmain, Robert - *Emeritus Faculty*, Anthropology (2010)

K

Kahn, David - *Emeritus Faculty*, Film and Theatre (2016)

Kajiwara, Sandra - *Emeritus Faculty*, University Library (2007)

Kallis, Morton - *Emeritus Faculty*, Marketing and Business Analytics (2018)

Kao, Arthur - *Emeritus Faculty*, Art and Art History (2011)

Karlinsky, Stewart - *Emeritus Faculty*, Accounting and Finance (2007)

Karpf, Jonathan - *Emeritus Faculty*, Anthropology (2020)

Kaschak, Ellyn - *Emeritus Faculty*, Psychology (2004)

Katsuura, Hidefumi - *Emerita Faculty*, Mathematics (2023)

Katzen, Rina - *Emerita Faculty*, World Languages and Literatures (2021)

Kaul, Sudha - *Emeritus Faculty*, Child and Adolescent Development (2022)

Keady, Richard - *Emeritus Faculty*, Humanities (2013)

Keeseey, Donald - *Emeritus Faculty*, English (2006)

Kellum, Kenneth - *Emeritus Faculty*, Mathematics (2014)

Kelly, John - *Emeritus Faculty*, Psychology (2005)

Kemp, Jerry - *Emeritus Faculty*, College of Education (2007)

Kendall, Susan - *Emeritus Faculty*, University Library (2019)

Kenk, Vida - *Emeritus Faculty*, University Library (2010)

Kennedy, Jean - *Emeritus Faculty*, Biological Sciences (2015)

Kessler, David - *Emeritus Staff*, College of Health and Human Science (2020)

Khan, Altaful - *Emeritus Staff*, University Library (2020)

Khan, Sharmin - *Emeritus Staff*, Linguistics and Language Development (2023)

Kibler, Ruthann - *Emeritus Faculty*, Biological Sciences (2009)
Kifer, Ruth - *Emeritus Staff*, University Library (2016)
Killingsworth, Amy - *Emeritus Faculty*, Occupational Therapy (2010)
Kim, Chungsoon - *Emeritus Faculty*, Child and Adolescent Development (2007)
Kimbarow, Michael - *Emeritus Faculty*, Communicative Disorders and Sciences (2019)
Kirchherr, Walter - *Emeritus Faculty*, Computer Science (2007)
Klingberg, Susan - *Emeritus Faculty*, University Library (2010)
Kowalczyk, Bridget - *Emeritus Faculty*, University Library (2015)
Kowalewski Ward, Julie - *Emeritus Staff*, University Library (2018)
Krovetz, Martin - *Emeritus Faculty*, Educational Leadership (2007)
Kubelka, Richard - *Emeritus Faculty*, Mathematics (2021)
Kumamoto, Robert - *Emeritus Faculty*, History (2010)
Kumaravadivelu, B - *Emeritus Faculty*, Linguistics and Language Development (2019)
Kupcho, Marilyn - *Emeritus Staff*, College of Education (2006)
Kurzweil, Jack - *Emeritus Faculty*, Electrical Engineering (2007)
Kutilek, Michael - *Emeritus Faculty*, College of Science (2011)
Kwan, Stephen - *Emeritus Faculty*, College of Business (2017)

L

Lam, Lui - *Emeritus Faculty*, Physics and Astronomy (2018)
Lamendella, John - *Emeritus Faculty*, Linguistics and Language Development (2007)
Langdon, Henriette - *Emeritus Faculty*, Communicative Disorders and Sciences (2017)
Lappin, Linda - *Lecturer Emerita*, English (2019)
Larson, Richard - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2019)
Lawrence, Anne - *Emeritus Faculty*, School of Management (2018)
Lawrence, Clyde - *Emeritus Faculty*, Journalism and Mass Communications (2008)
Lawson, Lucinda - *University Staff, Retired*, Electrical Engineering (2019)
Layton, Thomas - *Emeritus Faculty*, Anthropology (2011)
Le, Tuan - *Emeritus Faculty*, KSJS Radio (2009)
Leddy, Thomas - *Professor Emeritus*, Philosophy (2024)

Lee, Rose - *Emeritus Staff*, Administration and Finance (2011)

Lee, Steven - *Professor Emeritus*, Justice Studies (2022)

Lessow-Hurley, Judith - *Emeritus Faculty*, Teacher Education (2015)

Leung, Kai - *Emeritus Faculty*, World Languages and Literatures (2006)

Leventhal, Alan - *Emeritus Staff*, College of Social Sciences (2019)

Levine, Linda - *Emeritus Faculty*, Public Health and Recreation (2018)

Lewis, Carolyn - *Emeritus Faculty*, Athletic Director's Office (2006)

Lewis, Edward - *Emeritus Faculty*, College of Education (2006)

Lewis, Irene - *Emeritus Faculty*, Nursing (2012)

Lin, Ellen - *Emeritus Faculty*, Counseling and Psychological Services (2022)

Lindholm-Leary, Kathryn - *Emeritus Faculty*, Child and Adolescent Development (2011)

Linsdell, Jeanne - *Emeritus Faculty*, Interdisciplinary Engineering (2019)

Liu, Mengxiong - *Emeritus Faculty*, University Library (2016)

Liu, Susana - *Emeritus Faculty*, University Library (2014)

Lo, Laimin - *Emeritus Faculty*, English (2022)

Loomis, John - *Professor Emeritus*, Design (2024)

Lore, Craig - *Lecturer Emeritus*, English (2019)

Louden, Kenneth - *Emeritus Faculty*, Computer Science (2010)

Love, Robin - *Emeritus Faculty*, Child and Adolescent Development (2024)

Lovell, Jonathan - *Emeritus Faculty*, English (2019)

Lowenberg, Peter - *Emeritus Faculty*, Linguistics and Language Development (2010)

Lu, Mei-Yan - *Emeritus Faculty*, Educational Leadership (2023)

Lu, Nancy - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2011)

Lull, James - *Professor Emeritus*, Communication Studies (2004)

Lynch, Divina - *Emeritus Faculty*, University Library (2015)

M

Macrae, Anne - *Emeritus Faculty*, Occupational Therapy (2015)

Mai, Minh - *Emeritus Faculty*, College of Science (2020)

Maio, Samuel - *Emeritus Faculty*, English (2020)

Maldonado-Colon, Elba - *Emeritus Faculty*, College of Education (2019)

Male, Marilyn - *Emeritus Faculty*, Special Education (2007)

Mamary, Edward - *Emeritus Faculty*, Public Health and Recreation (2019)

Manning, Rita - *Emeritus Faculty*, Philosophy (2020)

Mao, Chia-Ling - *Professor Emeritus*, Nursing (2022)

Maples, Susan - *Emeritus Staff*, College of Engineering (2015)

Margolin, Cynthia - *Emeritus Faculty*, Psychology (2008)

Marin, Gina - *Professor Emeritus*, Center for Faculty Development (2022)

Markowitz, Nancy - *Emeritus Faculty*, Teacher Education (2016)

Martinelli, Kathleen - *Emeritus Faculty*, Journalism and Mass Communications (2018)

Martinet, Diane - *Professor Emeritus*, Journalism and Mass Communications (2022)

Master, Peter - *Emeritus Faculty*, Linguistics and Language Development (2004)

Masters, Gary - *Emeritus Faculty*, Music and Dance (2015)

Mathews, Fred - *Emeritus Faculty*, Film and Theatre (2019)

Matson, John - *Emeritus Faculty*, Biological Sciences (2009)

Matyska-Pesek, Maria - *Emeritus Faculty*, Chemistry (2020)

May, Anthony - *Emeritus Faculty*, Art and Art History (2009)

Mayer, Ludwig - *Emeritus Faculty*, Chemistry (2012)

Mayer, Peggy - *Emeritus Faculty*, Nursing (2021)

McBane, Margo - *Emeritus Faculty*, History (2021)

McClintick, Anita - *Emeritus Staff*, Music and Dance (2019)

McClory, Susan - *Emeritus Faculty*, Mathematics (2016)

McCullough, June - *Emeritus Faculty*, Communicative Disorders and Sciences (2023)

McIntyre, Michael - *Emeritus Faculty*, Geography (2011)

McWilliams, Mallory - *Lecturer Emeriti*, Accounting and Finance (2020)

McProud, Lucy - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2018)

Mcvey, Mary - *Emeritus Professor*, Child and Adolescent Development (2022)

Means, Tom - *Professor Emeritus*, Economics (2022)

Megginson, Nancy - *Emeritus Faculty*, Kinesiology (2018)

Meldal, Sigurd - *Emeritus Faculty*, Computer Engineering (2020)

Melkonian, Lina - *Emeritus Staff*, Development University Advancement (2014)

Menges, Howard - *Emeritus Faculty*, Kinesiology (2005)

Merdinger, Joan - *Emeritus Faculty*, Social Work (2012)

Meredith, William - *Emeritus Faculty*, Music and Dance (2016)

Merritt, Evelyn - *Emeritus Faculty*, Communicative Disorders and Sciences (2022)

Meserve, Harry - *Emeritus Faculty*, University Library (2010)

Meshner, David - *Emeritus Faculty*, Humanities (2018)

Meyers, Susan - *Emeritus Faculty*, Special Education (2009)

Miller, Cathleen - *Emeritus Faculty*, English (2020)

Miller, Robert - *Emeritus Faculty*, Geology (2023)

Millner, Steven - *Emeritus Faculty*, African American Studies (2019)

Moore, Robert - *Emeritus Faculty*, College of Health and Human Sciences (2009)

Mora-Torres, Gregorio - *Emeritus Lecturer*, Chicana and Chicano Studies (2020)

Moran, Meredith - *Emeritus Faculty*, Student Involvement (2006)

Moran, Sandra - *Retired Staff*, Advancement and Campaign Operations (2015)

Mori, Joseph - *Emeritus Faculty*, Accounting and Finance (2010)

Moriarty, Eugene - *Emeritus Faculty*, Electrical Engineering (2012)

Morris, Hedley - *Emeritus Faculty*, Mathematics (2007)

Morrill, Judi - *Emeritus Faculty*, Nutrition, FoodSci & Packaging (2020)

Moschetti, Thomas - *Emeritus Faculty*, Accounting and Finance (2016)

Mostafavi, Masoud - *Emeritus Faculty*, Electrical Engineering (2013)

Moustakas, Evangelos - *Emeritus Faculty*, Electrical Engineering (2007)

Movassat, Johanna - *Lecturer Emerita*, Art and Art History (2019)

Mukhopadhyay, Carol - *Emeritus Faculty*, Anthropology (2010)

Mumby, H. Hugh - *Emeritus Faculty*, Kinesiology (2006)

Murphy, Susan - *Emeritus Faculty*, Nursing (2007)

Murray, Denise - *Emeritus Faculty*, Linguistics and Language Development (2006)

Murray, Reginald - *Emeritus Faculty*, Marketing and Business Analytics (2021)

Murray, Susan - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2019)

Murray, William - *Emeritus Faculty*, Biological Sciences (2023)

Myers-Lipton, Scott - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2023)

N

Nakamura, Phyllis - *Emeritus Staff*, Psychology (2008)

Nance, William - *Emeritus Faculty*, Information Systems and Technology (2017)

Nelson, Deborah - *Emeritus Faculty*, Nursing (2021)

Ng, Ho-Kuen - *Emeritus Faculty*, Mathematics (2021)

Nichols, Patricia - *Emeritus Faculty*, Linguistics and Language Development (2011)

Nino, Mary - *Emeritus Staff*, University Library (2015)

Noble, Lela - *Emeritus Faculty*, Political Science (2002)

Nobuhiro, K - *Emeritus Staff*, Academic Planning and Budgets (2010)

Nolan, Nina - *Emeritus Staff*, College of Humanities and Arts (2023)

Norwood, B - *Emeritus Faculty*, School of Management (2004)

Novak, Jean - *Emeritus Faculty*, Communicative Disorders and Sciences (2021)

Nuger, Kenneth - *Emeritus Faculty*, Political Science (2016)

O

Obaid, Evelyn - *Emeritus Faculty*, Computer Science (2007)

Obaid, Samih - *Emeritus Faculty*, Mathematics (2021)

Obi, Samuel - *Professor Emeritus*, Technology (2024)

Oberdorfer, June - *Emeritus Faculty*, Geology (2021)

Ochoa, Maria - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2017)

Ohala, Manjari - *Emeritus Faculty*, Linguistics and Language Development (2015)

Okerlund, Arlene - *Emeritus Faculty*, English (2007)

Olcott, Marianina - *Emeritus Faculty*, Humanities (2015)

O'Leary-Kelley, Colleen - *Professor Emeritus*, Nursing (2022)

Olliges, Sandra - *Emeritus Faculty*, Kinesiology (2018)

Onkvisit, Sak - *Emeritus Faculty*, Marketing and Business Analytics (2021)

Ortega, Lydia - *Emeritus Faculty*, Economics (2020)

Osikominu, Olufemi - *Emeritus Staff*, University Library (2021)

Osland, Joyce - *Emeritus Faculty*, College of Business (2020)

Otten, Charles - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2005)

Ozaki, Linda - *Emeritus Staff*, Athletic Director's Office (2017)

P

Parker, Joan - *Emeritus Faculty*, University Library (2016)

Parrish, James - *Emeritus Faculty*, Biological Sciences (2019)

Parsons, Sharon - *Emeritus Faculty*, Teacher Education (2011)

Parsons, Virgil - *Emeritus Faculty*, Nursing (2009)

Parvin, Kiumars - *Emeritus Faculty*, Physics and Astronomy (2016)

Paul, H - *Emeritus Faculty*, University Library (2011)

Payne, Virgil - *Emeritus Faculty*, Kinesiology (2018)

Pedretti, Lorraine - *Emeritus Faculty*, Occupational Therapy (2005)

Pellegrini, Robert - *Emeritus Faculty*, Psychology (2009)

Pence, Barbara - *Emeritus Faculty*, Mathematics (2021)

Pendleton, Heidi - *Emeritus Faculty*, Occupational Therapy (2019)

Perales, Daniel - *Emeritus Faculty*, Public Health and Recreation (2014)

Perry, Richard - *Emeritus Faculty*, Justice Studies (2015)

Pesek, Joseph - *Emeritus Faculty*, Chemistry (2019)

Peterson, Christina - *Emeritus Faculty*, University Library (2013)

Pfiefer, Richard - *Emeritus Faculty*, Mathematics (2019)

Phan, Chanh - *Emeritus Faculty*, Humanities (2021)

Phillips, Veril - *Emeritus Faculty*, Computer Science (2000)

Pierce, Lorna - *Lecturer Emerita*, Anthropology (2019)

Poindexter, Elizabeth - *Emeritus Faculty*, Film and Theatre (2010)

Pollock, John - *Emeritus Faculty*, English (2008)

Post, Richard - *Emeritus Faculty*, Mathematics (2005)

Powers, Harry - *Emeritus Faculty*, Art and Art History (2012)

Prins, Annabel - *Emeritus Faculty*, Psychology (2021)

Probasco, Preston - *Emeritus Faculty*, School of Management (2011)

Q

Qayoumi, Mohammad - *Emeritus Staff*, Office of the President (2016)

Quintanar-Sarellana, Rosalinda - *Emeritus Faculty*, Teacher Education (2020)

R

Radde, Bruce - *Emeritus Faculty*, Art and Art History (2005)

Ramonda, Robert - *Emeritus Faculty*, College of Education (2006)

Reckmeyer, William - *Emeritus Faculty*, Anthropology (2016)

Redfern, Bernice - *Emeritus Faculty*, University Library (2014)

Reischl, Peter - *Emeritus Faculty*, Electrical Engineering (2015)

Reynolds, Edward - *Emeritus Faculty*, History (2018)

Reynolds, Judith - *Emeritus Faculty*, University Library (2006)

Reza, Ali - *Emeritus Lecturer*, Accounting and Finance (2016)

Rickford, Angela - *Emeritus Faculty*, Special Education (2019)

Richardson, Pamela - *Emeritus Faculty*, Occupational Therapy (2023)

Rios, Katheryn, *Emeritus Lecturer*, Chicana and Chicano Studies, (2017)

Roberg, Roy - *Emeritus Faculty*, Justice Studies (2013)

Robinson, Michael - *Emeritus Faculty*, Computer Engineering (2018)

Roden, Laura - *Emeritus Faculty*, Accounting and Finance (2022)

Rodriguez, Lorraine - *Emeritus Faculty*, Nursing (2017)

Roe, Kathleen - *Emeritus Faculty*, Public Health and Recreation (2020)

Rothblatt, Donald - *Emeritus Faculty*, Urban and Regional Planning (2006)

Rowntree, Lester - *Emeritus Faculty*, Environmental Studies (2006)

Rucker, Robert - *Emeritus Faculty*, Journalism and Mass Communications (2020)

Rucker, Rudy - *Emeritus Faculty*, Computer Science (2006)

Rue, Victoria - *Emeritus Faculty*, Humanities (2020)

Rycenga, Jennifer - *Emeritus Faculty*, Humanities (2023)

S

Salazar, Dayana - *Emeritus Faculty*, College of Social Sciences (2019)

Sams, Edwin - *Emeritus Faculty*, English (2020)

Samway, Katharine - *Emeritus Faculty*, Teacher Education (2011)

Sanderson, George - *Emeritus Faculty*, Accounting and Finance (2007)

Santos, Ted - *Emeritus Staff*, College of Science (2005)

Sapiens, Alexander - *Emeritus Faculty*, Teacher Education (2010)

Savage, Wayne - *Emeritus Faculty*, Biological Science (2022)

Sawyer, Jeanne - *Emeritus Faculty*, Information Systems and Technology (2019)

Saylor, Coleen - *Emeritus Faculty*, Nursing (2009)

Schmeichel, Edward - *Emeritus Faculty*, Mathematics (2015)

Schmidt, C - *Emeritus Faculty*, School of Information (2010)

Schragg, Eugene - *Lecturer Emeritus*, English (2019)

Schwartz, Kathleen - *Emeritus Faculty*, Occupational Therapy (2011)

Sedlock, Richard - *Emeritus Status*, College of Science (2012)

Selter, Gerald - *Emeritus Faculty*, Chemistry (2011)

Selter, Gerald - *Emeritus Staff*, Provost/SVP Academic Affairs (2011)

Sempere-Martinez, Juan - *Emeritus Faculty*, World Languages and Literatures (2021)

Serrett, Karen - *Emeritus Faculty*, Occupational Therapy (2006)

Sharestein, Harvey - *Emeritus Faculty*, Mechanical and Aerospace Engineering (2005)

Sharp, Pamela - *Emeritus Faculty*, Art and Art History (2007)

Shaw, William - *Emeritus Faculty*, Philosophy (2018)

Shieh, Yeung-Nan - *Emeritus Faculty*, Economics (2015)

Shifflett, Bethany - *Emeritus Faculty*, Kinesiology (2022)

Shillinglaw, Susan - *Emeritus Faculty*, English (2021)

Shubin, Tatiana - *Emeritus Faculty*, Mathematics (2020)

Sigler, Maria - *Professor Emerita*, World Languages and Literatures (2015)

Simons, Edgar - *Emeritus Faculty*, Mathematics (2005)

Simonson, Anne - *Emeritus Faculty*, Art and Art History (2019)

Singh, Avtar - *Emeritus Faculty*, Electrical Engineering (2016)

Singh, Rameshwar - *Emeritus Faculty*, Civil and Environmental Engineering (2012)

Sinton, Douglas - *Emeritus Faculty*, Meteorology and Climate Science (2011)

Sirkin, Dalia - *Emeritus Faculty*, English (2020)

Sisson, Lorene - *Emeritus Faculty*, University Library (2011)

Sivertsen, Aimee - *Emeritus Faculty*, Counseling and Psychological Services (2014)

Slayton, Joel - *Emeritus Faculty*, Art and Art History (2017)

Sloan, Stephen - *Emeritus Staff*, Instructional and Meeting Spaces (2017)

Smith, Elveda - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2007)

Smith, Jeffrey - *Emeritus Faculty*, Computer Science (2016)

Smith, Jerry - *Emeritus Faculty*, Biological Sciences (2015)

Smith, Lonna - *Emeritus Faculty*, Secondary Education (2007)

Snell, Jacqueline - *Emeritus Faculty*, Marketing and Business Analytics (2016)

Snowbarger, Marvin - *Emeritus Faculty*, Economics (2006)

Sokoloff, Larry - *Emeritus Faculty*, Journalism and Mass Communications (2021)

Soto, Margaret - *Emeritus Staff*, Office of the President (2017)

Southam, Marti - *Emeritus Faculty*, Occupational Therapy (2008)

Spano, Shawn - *Emeritus Faculty*, Communication Studies (2023)

Speck, Marsha - *Emeritus Faculty*, Educational Leadership (2007)

Spilker, Arlene - *Professor Emeritus*, Nursing (2024)

Sprague, Jo - *Emeritus Faculty*, Communication Studies (2006)

Sproule, J. Michael - *Emeritus Faculty*, Communication Studies (2002)

Sreeharsha, Karnamadakala - *Emeritus Faculty*, Chemical and Materials Engineering (2005)

Stacks, Pamela - *Emeritus Faculty*, Chemistry (2021)

Stahl, Rae - *Emeritus Staff*, University Library (2018)

Stanley, Maurice - *Emeritus Faculty*, Mathematics (2020)

Steinberg, Jill - *Emeritus Faculty*, Counseling and Psychological Services (2009)

Stern, Frederick - *Emeritus Faculty*, Mathematics (2007)

Sternlieb, Myra - *Emeritus Faculty*, Nursing (2019)

Stevens, Calvin - *Emeritus Faculty*, Geology (2011)

Stone, Bradley - *Emeritus Faculty*, Chemistry (2019)

Strandburg, Donald - *Emeritus Faculty*, Physics and Astronomy (2005)

Strasilla, Udo - *Emeritus Faculty*, Electrical Engineering (2015)
Straus, Daniel - *Emeritus Faculty*, Chemistry (2019)
Strong, Anna - *Emeritus Faculty*, Mathematics (2018)
Stross, Randall - *Emeritus Faculty*, School of Management (2018)
Stuenkel, Diane - *Emeritus Faculty*, Nursing (2018)
Sucher, Kathryn - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2013)
Surgalski, Patrick - *Emeritus Faculty*, Art and Art History (2021)
Swann, Howard - *Emeritus Faculty*, Mathematics (2011)
Sylvia, Ronald - *Emeritus Faculty*, Political Science (2010)

T

Tabera, Phillip - *Emeritus Staff*, Chicana and Chicano Studies (2021)
Tai, Ping - *Emeritus Staff*, University Library (2015)
Taketa, Richard - *Emeritus Faculty*, Geography (2015)
Taylor, Brian - *Emeritus Faculty*, Art and Art History (2017)
Thames, Terri - *Emeritus Faculty*, Counseling and Psychological Services (2012)
Thomas, Jerry - *Emeritus Faculty*, Marketing and Business Analytics (2013)
Thurston, Jacqueline - *Professor*, Art and Art History (2007)
Tiedt, Sidney - *Emeritus Faculty*, College of Education (2006)
Tieszen, Richard - *Emeritus Faculty*, Philosophy (2016)
Toepfer, Karl - *Professor Emeritus*, Film and Theatre (2015)
Tomley, Leslie - *Emeritus Faculty*, Physics and Astronomy (2009)
Tran, Anh-Tuyet - *Emeritus Faculty*, Chemistry (2023)
Trost, Lou Ann - *Emeritus Faculty*, Humanities (2020)
Trudeau, Danielle - *Emeritus Faculty*, World Languages and Literatures (2016)
Tsai, Kuei-Wu - *Emeritus Faculty*, Civil and Environmental Engineering (2015)
Tseng, Chris - *Professor Emeritus*, Computer Science (2024)
Tsuruike, Masaaki - *Emeritus Faculty*, Kinesiology (2023)
Tu, Elizabeth - *Emeritus Staff*, Center for Faculty Development (2020)
Turner, Marlene - *Emeritus Faculty*, School of Management (2017)

U

Uhlik, Kim - *Emeritus Faculty*, Hospitality, Tourism and Event Management (2011)

Underdal, Stanley - *Emeritus Faculty*, History (2010)

V

Vahey, Terry - *Emeritus Staff*, Information Technology (2017)

Varona, Federico - *Emeritus Faculty*, Communication Studies (2021)

Vasquez, George - *Emeritus Faculty*, History (2019)

Vasquez, Linda - *University Administrator, Retired*, Business Operations (2006)

Vaughn, Stanley - *Emeritus Faculty*, College of Science (2020)

Venkatsubramanian, Shailaja - *Emeritus Faculty*, Information Systems and Technology (2019)

Villagran, Gilbert - *Emeritus Faculty*, School of Social Work (2017)

Vitale, Robert - *Emeritus Faculty*, Marketing & Business Analytics (2021)

Virden, Randy - *Emeritus Faculty*, Hospitality, Tourism and Event Management (2014)

Von Till, Mary - *Emeritus Faculty*, Communication Studies (2020)

Voth, Alden - *Emeritus Faculty*, Political Science (2009)

W

Wagers, Robert - *Emeritus Faculty*, School of Information (2010)

Wagner, John - *Emeritus Faculty*, College of Engineering (2013)

Walker, Dan - *Emeritus Faculty*, Biological Sciences (2008)

Walker, Ethel - *Professor Emerita*, Film and Theatre (2014)

Wall, Jack - *Emeritus Faculty*, School of Social Work (2019)

Wall, Kathleen - *Emeritus Faculty*, Counseling and Psychological Services (2004)

Walsh, James - *Emeritus Faculty (Dean)*, College of Science (2010)

Walsh, Linda - *Emeritus Faculty*, Art and Art History (2011)

Walter, Leta - *Emeritus Faculty*, Kinesiology (2007)

Walters, Sheryl - *Emeritus Staff*, Alumni and Community Engagement (2011)

Wander, Philip - *Emeritus Faculty*, Communication Studies (2006)

Wang, Ji - *Professor Emeritus*, Mechanical and Aerospace Engineering (2013)

Warren, Shirley - *Emeritus Staff*, Instructional and Meeting Spaces (2013)

Wassenaar, Dirk - *Emeritus Faculty*, Marketing and Business Analytics (2010)

Watkins, Thayer - *Emeritus Faculty*, Economics (2008)

Webb, Gordon Kent - *Professor Emeritus*, Information Systems and Technology (2022)

Weddington, Donald - *Emeritus Faculty*, College of Science (2008)

Weddington, Gloria - *Emeritus Faculty*, Communicative Disorders and Sciences (2012)

Weedman, Judith - *Emeritus Faculty*, School of Information (2014)

Welschmeyer, Nicholas - *Emeritus Faculty*, Moss Landing Marine Lab (2020)

West, Joel - *Emeritus Faculty*, School of Management (2011)

Whaley, George - *Emeritus Faculty*, School of Management (2010)

White, Steven - *Emeritus Faculty*, Biological Sciences (2013)

Whitlatch, Jo - *Emeritus Faculty*, University Library (2006)

Whittaker, Andrea - *Emeritus Faculty*, Teacher Education (2010)

Wilcox, Dennis - *Emeritus Faculty*, Journalism and Mass Communications (2010)

Wilhelm, Brenda - *Emeritus Staff*, College of Humanities and the Arts (2021)

Wilkinson, Susan - *Emeritus Faculty*, Kinesiology (2014)

Willey, Sharon - *Emeritus Staff*, Academic Initiatives and Partnerships (2023)

Williams, John - *Emeritus Faculty*, Geology (2011)

Williams, Gareth - *Emeritus Faculty*, Physics and Astronomy (2006)

Williams, Nancy - *Emeritus Faculty*, Psychology (2010)

Williams, Yvonne - *Emeritus Faculty*, Art and Art History (2022)

Wilson, William - *Emeritus Faculty*, English (2019)

Wong, Yen - *Professor Emerita*, Film and Theatre (2010)

Wools, Esther - *Emeritus Faculty*, School of Information (2010)

Wu, Yuh-Fen - *Emeritus Faculty*, University Library (2019)

Wyman, Daniel - *Professor Emeritus*, Music and Dance (2010)

Wyman, Marilyn - *Lecturer Emerita*, Humanities (2015)

Y

Yamato, Alexander - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2019)

Yambrach, Fritz - *Emeritus Faculty*, Nutrition, Food Science and Packaging (2023)

Yang, Charlotte - *Professor Emerita*, Justice Studies (2014)

Yengoyan, Leon - *Emeritus Faculty*, Chemistry (2007)

Yoder, Marian - *Emeritus Faculty*, Nursing (2009)

Young, Allen - *Emeritus Faculty*, Sociology and Interdisciplinary Social Sciences (2008)

Young, Peter - *Emeritus Faculty*, Journalism and Mass Communication (2022)

Z

Zaretsky, Kathleen - *Emeritus Faculty*, Anthropology (2016)

Zlotolow, Steve - *Emeritus Staff*, CPGE Central Administration (2014)

Zoroofchi, Mahammad - *Emeritus Faculty*, Electrical Engineering (2016)

Zsutty, Theodore - *Emeritus Faculty*, Civil and Environmental Engineering (2005)

Colleges & Departments

The San José State University's Division of Academic Affairs, led by the provost and senior vice president for Academic Affairs and the Academic Affairs Leadership Team, includes the colleges, Undergraduate Education, Institutional Research, Academic Budgets and Administration, and the University Library.

Lucas College and Graduate School of Business

View information for the Lucas College and Graduate School of Business, including a list of departments, services, and more.

Department of Accounting and Finance

Department of Hospitality, Tourism and Event Management

Department of Marketing and Business Analytics

Lucas Graduate School of Business

School of Global Innovation and Leadership

School of Information Systems and Technology

School of Management

Connie L. Lurie College of Education

View information for the Connie L. Lurie College of Education, including a list of departments, services, and more.

Department of Child and Adolescent Development

Department of Communicative Disorders and Sciences

Department of Counselor Education

Department of Educational Leadership

Department of Special Education

Department of Teacher Education

Charles W. Davidson College of Engineering

View information for the Charles W. Davidson College of Engineering, including a list of departments, services, and more.

Department of Aerospace Engineering

Department of Aviation and Technology

Department of Biomedical Engineering

Department of Chemical and Materials Engineering

Department of Civil and Environmental Engineering

Department of Computer Engineering

Department of Electrical Engineering

Department of Industrial and Systems Engineering

Department of Mechanical Engineering

Interdisciplinary Engineering Program

College of Health and Human Sciences

View information for the College of Health and Human Sciences, including a list of departments, services, and more.

Department of Aerospace Studies (Air Force ROTC)

Department of Audiology

Department of Kinesiology

Department of Military Science (Army ROTC)

Department of Nutrition, Food Science and Packaging

Department of Occupational Therapy

Department of Public Health and Recreation

School of Social Work

The Valley Foundation School of Nursing

College of Humanities and the Arts

View information for the College of Humanities and the Arts, including a list of departments, services, and more.

Department of Art and Art History

Department of Design

Department of English and Comparative Literature

Department of Film and Theatre

Department of Humanities

Department of Linguistics and Language Development

Department of Philosophy

Department of World Languages and Literatures

School of Journalism and Mass Communications

School of Music

College of Information, Data & Society

View information for the College of Information, Data & Society, including a list of departments, services, and more.

Department of Applied Data Science

School of Information

College of Science

View information for the College of Science, including a list of departments, services, and more.

Department of Biological Sciences

Department of Chemistry

Department of Computer Science

Department of Geology

Department of Mathematics and Statistics

Department of Meteorology and Climate Science

Department of Physics and Astronomy

Moss Landing Marine Laboratories

Science Education Program

College of Social Sciences

View information for the College of Social Sciences, including a list of departments, services, and more.

Department of African American Studies

Department of Anthropology

Department of Chicana and Chicano Studies

Department of Communication Studies

Department of Economics

Department of Environmental Studies

Department of History

Department of Justice Studies

Department of Political Science

Department of Psychology

Department of Sociology and Interdisciplinary Social Sciences

Department of Urban and Regional Planning

Professional & Global Engagement

View information for the Professional & Global Engagement, including a list of programs, services, and more.

Continuing Education Units (CEUs)

Open University

Professional Programs

Semester @ SJSU

SJSU Online

Service Departments

Athletics (Intercollegiate)

College of Graduate Studies

Undergraduate Education

How to Become a Teacher

A California teaching credential is a license to teach in California public schools. A single subject credential is primarily for those who intend to teach in a designated subject area at the secondary (high school) or middle school level. A multiple subject credential is primarily for those intending to teach multiple subjects in the elementary or middle school level. The Education Specialist Credential is for individuals who want to become special educators.

A description of the different options is outlined on these pages. The process, requirements, and application materials are described in detail on each program's website.

Preparation and Tests

Credential	Undergraduate Preparation	Tests	Postbaccalaureate Preparation
Pre-School	Consult Child and Adolescent Development department	None	None
Elementary (TK-8)	Preparation to teach in any TK-8 grade in one of the following programs is strongly recommended-Child and Adolescent Development, Creative Arts, Environmental Studies, Liberal Studies, Natural Science, or Social Science	CBEST, CSET for Multiple Subject or equivalent	Multiple Subject Credential program
High School	Complete a Single Subject Matter Preparation program or pass CSET	CBEST or equivalent	Single Subject Credential program
Special Education	Complete a Multiple or Single Subject Matter Preparation program and/or demonstrate subject matter competence by CSET	CBEST or equivalent	Education Specialist Credential Program
Bilingual/ESL Authorization (Grades K-12)		CBEST, CSET or equivalent and Language Proficiency via the CSET LOTE III Test in Spanish	Multiple Subject Teaching Credential program with Bilingual Authorization
College	Complete a major in the subject that you want to teach	Consult major department	PhD (or MA/MS for some community colleges)

Becoming an Elementary School Teacher

1. Seek Subject Matter Preparation

As an undergraduate student consider one of the following programs to strengthen your preparation:

- Department of Child and Adolescent Development
- Department of Environmental Studies
- Department of Humanities

- Each of the above departments has majors with a teacher preparation option that was designed to provide you the opportunity to learn the content you will apply as you teach in grades K-8.
- 2. Apply for Admission to the Multiple Subject Credential Program
 - Applications to the Credential Program are accepted for Fall, Spring, and Summer semesters.
 - Requirements include:
 - Admission to Graduate Studies at San José State University
 - Grade point average (GPA) of 2.75 or above (undergraduate or last 60/90 calculation)
 - Passing score on California Basic Education Skills Test (CBEST) or equivalent
 - Pre-professional experience in a K-8 public school setting. This requirement can be met either through fieldwork hours completed as part of a college course, experience in a K-8 classroom, or a combination of the above. Experience observing/assisting or teaching in a Title 1 or "low performing" school is encouraged. Experience in a private school setting or at the preschool level cannot be included as part of the 45-hour minimum for pre-professional experience.
 - Passing score on California Subject Examinations for Teachers (CSET): Multiple Subject Tests or equivalent
 - Completion of a CalState Apply application
 - Submission of transcripts from all colleges attended outside of SJSU.
- 3. Complete all requirements for the Preliminary Multiple Subject Credential as listed below.

PRELIMINARY CREDENTIAL

- Bachelor's degree from a regionally accredited college or university and program. Bachelor's degree must be granted on the same day or after university graduation.
- Prerequisites: Certificate of Clearance for personal and professional fitness
- Foundations: EDTE 224 and EDTE 208
- Dual language: EDTE 262
- Curriculum: EDEL 108A, EDEL 108B, EDEL 108C and EDEL 108D
- Student teaching: EDEL 143A and EDEL 143B, including EDTE 260
- In addition, before or during the program, students must take and pass EDTE 190 or its equivalent
- *Program completers must also take and pass -
 - The Reading Instruction Competence assessment (RICA)
 - CalTPA (California Teaching Performance Assessment)
 - Satisfaction of the U.S. Constitution requirement
 - Level I Technology requirement
 - CPR - Adult, Child, Infant
- When ready, candidates should visit Credential Services to review requirements for the Multiple Subject Credential application process.

PROFESSIONAL CLEAR CREDENTIAL

- Employed teachers need to continue professional development for the advanced credential following completion of the Preliminary Credential. To meet the requirements for the advanced teaching credential check with the Commission on Teacher Credentialing (CTC) at www.ctc.ca.gov.

Becoming a Secondary School Teacher

1. Complete a Single Subject Matter Preparation Program
Programs with asterisks (*) are majors that are fully compliant with the requirements of the No Child Left Behind (NCLB) Act. Students in other majors may have to take the California Subject Exam for Teachers (CSET). See your department advisor for your particular course of study.

Major	Credential
Art	Art
Biology*	Science: Biological Sciences
Chemistry*	Science: Chemistry
Earth Science*	Science: Geosciences
Economics	Social Science
English*	English
French	World Language: French
Geography	Social Science
History	Social Science
Japanese	World Language: Japanese
Journalism	English
Kinesiology	Kinesiology
Mandarin	World Language: Mandarin
Mathematics*	Mathematics
Meteorology*	Science: Physics
Music	Music
Physical Education	Kinesiology
Physics*	Science: Physics
Political Science	Social Science
Social Sciences	Social Science
Spanish	World Language: Spanish
Speech Communication	English
Theatre Arts	English

Students who have completed or wish to complete another major may consult with the teacher preparation advisor from one of the listed programs to determine possible equivalence to Single Subject Matter Competency.

2. Apply for Admission to the Single Subject Credential Program.
Applications to the Credential Program are accepted for both Fall and Spring semesters. Visit the program website at www.sjsu.edu/teachered for information on how to apply. Please note that the process of meeting application requirements can take several months to complete, so plan ahead.
3. Complete a Professional Preparation Program leading to a single subject credential. Requirements include:

PRELIMINARY CREDENTIAL (LEVEL 1)

Non-renewable, valid for a maximum of five years.

- o Bachelor's degree from a regionally accredited college or university
- o Prerequisite: Certificate of Clearance of personal and professional fitness
- o EDTE 208 - Educational Sociology
- o EDTE 224 - Seminar in Educational Psychology
- o EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy
- o EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners
- o EDTE 294 - Research/Practices in Health and Special Education
- o EDTE 282 - Assessment and Evaluation
- o EDSC 184X - Student Teaching I
- o Phase II Student Teaching: 184Y and 184Z in disciplinary departments
- o CalTPA
- o Subject-specific methods
- o CPR (adult, infant and child)
- o U.S. Constitution requirement
- o Technology requirement

Becoming a Special Education Teacher

1. Apply for admission to the Education Specialist Preliminary Teaching Credential: Early Childhood Special Education, Education Specialist Preliminary Teaching Credential: Mild/Moderate Support Needs, Education Specialist Preliminary Teaching Credential: Extensive Support Needs . Requirements include:
 - o Bachelor's degree from a regionally accredited college or university and program.
 - o Admission to San José State University.
 - o Grade Point average (GPA) of 2.75, or better.
 - o Passing score on the California Basic Education Skills Test (CBEST) or other approved method to meet the Basic Skills Requirement.
 - o Passing score on any of the California Subject Examinations for Teachers (or other approved method to meet Subject Matter Competency).
 - o Satisfaction of the Constitution requirement.
 - o Completion of 45 hours of verifiable, supervised experience with children in an instructional setting
 - o Completion of Department of Special Education materials in Quadrant 4 of CSU Apply including two letters of professional recommendation.
2. Complete a Professional Preparation Program leading to the Educational Specialist Credential
To be endorsed for the credential, the following requirements apply to all options:

PRELIMINARY CREDENTIAL

- o Satisfied all course requirements for the credential option (see Special Education section of the Catalog).
- o Grades of "B" or better in all credential courses/GPA of 3.0
- o Proof of competence in Reading Instruction by passing the RICA, unless having a valid California Multiple Subject Credential or Single Subject Credential.

- Satisfactory Dispositions Evaluations

Undergraduate BSN Application and Admission Procedures

Prior to applying to the University, students should refer to The Valley Foundation School of Nursing' website for application information. Virtual advising is available through monthly group sessions, and individual advising appointments. Applicants are encouraged to attend a 2-hour monthly group advising session offered during the spring and fall semesters. Group advising recorded presentation PowerPoints are available for review. Nursing has been an impacted major since Spring 2005 and certain supplemental criteria must be met. A student may apply a maximum of two times to this program. If not admitted by then, the student should seek general University advising to change to a different major.

The Valley Foundation School of Nursing has biannual admission application periods - Spring and Fall. Transfer students can only apply to the fall semester and post-baccalaureate students can only apply to the Spring semester. Application to the nursing program is a 2-step application process:

1. Submit a University application to Cal State Apply and official transcripts of all previous college work to the Office of Admissions. For current SJSU students, apply via NursingCAS only.
2. Submit to the nursing program via NursingCAS

The Valley Foundation School of Nursing has biannual admission application periods - Spring and Fall, although the University does not open Spring applications for transfer students. Students must have all 8 prerequisites completed in order to apply to NursingCAS for the applicant pool.

To be considered in the nursing application pool, applicants must meet the following supplemental criteria:

1. A minimum composite GPA of 3.3 for 8 prerequisite courses (BIOL 65, BIOL 66, MICR 20, ENGL 1A, CHEM 30A, COMM 20, STAT 95, and GE Area A3). All courses must be passed with a C or better.
2. BIOL 65, BIOL 66, and MICR 20 must be completed within 5 years of establishing eligibility and passed with a grade of "C" or better. If the course does not meet the 5-year, recency requirement the student will need to retake that course. The grade for any of these 3 courses taken within the 5 years will be used for calculation purposes. Courses may not be repeated, except for academic grade forgiveness when taken at the original school and this designation must appear on official transcripts. ("W" and "WB" grades are excluded).
3. A minimum TEAS score of 84%. This exam may only be taken within the past 5 years with a maximum of two trials. The highest score will be used in the impaction scoring.
4. Corequisites (NUFS 8, PSYC 1, and CHAD 70 must have a minimum of C, have been repeated no more than once, and either be completed or "in progress at the time of the Nursing application to NursingCAS.

Impaction Scoring

Students meeting the above minimum criteria will be ranked according to the following:

1. **GPA of all 8 required prerequisites of 3.3.** The 8 prerequisite GPA counts as $\frac{2}{3}$ of the impaction score.
2. **Test of Essential Academic Skills (TEAS)** - version 6 or 7 - available through the SJSU Testing Office. The TEAS minimum score is 84%. The TEAS test may be repeated only one time, regardless of version. The highest score will be used in the impaction scoring. To sign up for the TEAS exam, please see the SJSU Testing website For impaction scoring purposes, your TEAS score is divided by 30, to use a score that is similar to a GPA. For impaction calculations your TEAS 6.0 or 7.0 score is divided by 30 to create a score to be included in the final "impaction" scoring.
3. A minimum TEAS test of 84% counts as $\frac{1}{3}$ of the score. An increase in impaction score is applied if the applicant has the following: specific healthcare experience of a minimum of 100 hours within the past 3 years of application, completion of the three corequisites prior to applying, and first generation applicants based on the University criteria.

Application to nursing and documentation deadlines for entry in Fall semester is Feb. 15. Application and documentation deadline for entry in Spring semester is September 15.

Students may apply to NursingCAS up to one month prior to these NursingCAS deadlines.

In order to join the applicant pool for The Valley Foundation School of Nursing, students must:

1. Declare "pre-nursing undeclared" or any other major. The student does not receive the designation of "nursing major" until they are accepted and receive final confirmation by the School of Nursing.
2. Submit an application to NursingCAS with documented completion of prerequisites and TEAS score during the online application process. No prerequisites may be "in progress".
3. Three (3) corequisite courses must be completed with a C or better before beginning nursing courses.
4. Submit United States citizenship (U.S. Birth Certificate or current U.S. Passport) or Green Card Permanent Resident (documentation required). DACA or non-DACA students need certain documentation. Additionally, a California Driver's License (or picture ID from Driver's License Bureau) is also required.
5. Submit a signed functional competencies form (available on nursing website).
6. If applicable, submit documentation of healthcare experience using the Healthcare Experience Form.
7. Once admitted "provisionally", the student completes a required background check and drug clearance, using the School's vendor. A clear background check and drug screen are required. More information on this content is on the School's website under "Policies".
8. There is priority admission for persons with past military experience who meet minimum criteria.
9. Prior Baccalaureate applicants can only apply for Spring starts, and spots are limited to 10% of applicant selectees allowed by administration (e.g. 6 spots maximum, out of 60) within the application pool ranking.

Please note that application requirements and prerequisite courses are subject to change. Interested students should check the nursing website frequently for updates and changes.

Major Start Terms and CIP Codes

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z

Source: CSU Degrees Database. For questions or to request corrections, contact curriculum@sjsu.edu.

Click to view a list of discontinued majors by effective term. For the "Status" column, "A" signifies an active program and "S" a suspended program.

Support Mode	Degree Type	Status	Major CIP Code	Major Title	Conc CIP Code	Concentration Title	Program Start Term	Min Units to Degree	Delivery Format
State	MS	A	52.1399	Accounting and Analytics	52.0301	Accounting and Analytics	F1990	30	Fully Face to Face
State	BS	A	9.0903	Advertising	9.0903	Advertising	F1950	120	Fully Face to Face
State	BS	A	14.0201	Aerospace Engineering	14.0201	Aerospace Engineering	F1988	120	Hybrid
State	MS	A	14.0201	Aerospace Engineering	14.0201	Aerospace Engineering	F1995	30	Fully Face to Face
State	BA	A	5.0201	African American Studies	5.0201	African American Studies	F1970	120	Fully Face to Face
State	BFA	A	50.0102	Animation & Illustration	50.0102	Animation & Illustration	F2021	120	Fully Face to Face
State	BA	A	45.0201	Anthropology	45.0201	Anthropology	F1966	120	Fully Face to Face
Self	BA	A	45.0201	Anthropology	45.0201	Anthropology	S2023	120	Online
State	MA	A	45.0201	Applied Anthropology	45.0201	Applied Anthropology	F2006	36	Fully Face to Face
State	BS	A	27.0301	Applied Mathematics	27.0301	Applied and Computational Mathematics	F1998	120	Fully Face to Face

State	MS	A	27.0301	Applied Mathematics	27.0301	Applied Mathematics	F2022	33	Fully Face to Face
Self	MARA	A	25.0103	Archives and Records Administration	25.0103	Archives and Records Administration - General	F2008	42	Online
State	BA	A	50.0701	Art	50.0701	Studio Practice	F1991	120	Fully Face to Face
State	BA	A	50.0701	Art	50.0701	Studio Practice, Preparation for Teaching	F1965	120	Fully Face to Face
State	BFA	A	50.0702	Art	50.0702	Digital Media Art	F1997	120	Fully Face to Face
State	BFA	A	50.0702	Art	50.0702	Photography	F1984	120	Fully Face to Face
State	BFA	A	50.0702	Art	50.0702	Pictorial Art	F1984	120	Fully Face to Face
State	BFA	A	50.0702	Art	50.0702	Spatial Art	F1984	120	Fully Face to Face
State	MA	A	50.0701	Art	50.0703	Art History and Visual Culture	F1976	30	Fully Face to Face
State	MFA	A	50.0702	Art	50.0702	Digital Media Art	F2000	60	Fully Face to Face
State	MFA	A	50.0702	Art	50.0702	Photography	F1992	60	Fully Face to Face
State	MFA	A	50.0702	Art	50.0702	Pictorial Art	F1976	60	Fully Face to Face

State	MFA	A	50.0702	Art	50.0702	Spatial Art	F1976	60	Fully Face to Face
State	BA	A	50.0703	Art History and Visual Culture	50.0703	Art History and Visual Culture - General	F2020	120	Fully Face to Face
Self	MS	A	11.0102	Artificial Intelligence	11.0102	Artificial Intelligence - General	F2020	33	Fully Face to Face
State	MS	A	11.0102	Artificial Intelligence	11.0102	Artificial Intelligence - General	F2021	33	Fully Face to Face
State	BA	A	5.0206	Asian American Studies	5.0206	Asian American Studies	F2024	120	Fully Face to Face
State	AUD	A	51.0202	Audiology	51.0202	Audiology	F2020	110	Face to Face
State	BS	A	49.0101	Aviation	49.0101	Aviation - General	F1947	120	Fully Face to Face
State	BA	A	30.1701	Behavioral Science	30.1701	Behavioral Science	F1966	120	Fully Face to Face
State	MS	A	26.1103	Bioinformatics	26.1103	Bioinformatics - General	F2018	31	Fully Face to Face
State	BA	A	26.0101	Biological Sciences	26.0101	Biological Sciences		120	Fully Face to Face
State	BS	A	26.0101	Biological Sciences	26.0502	Microbiology	F1984	120	Fully Face to Face
State	BS	A	26.0101	Biological Sciences	26.0204	Molecular Biology	F1984	120	Fully Face to Face

State	BS	A	26.0101	Biological Sciences	26.0901	Systems Physiology	F1984	120	Fully Face to Face
State	MA	A	26.0101	Biological Sciences	26.0101	Biological Sciences		30	Fully Face to Face
State	MS	A	26.0101	Biological Sciences	3.9999	Ecology and Evolution		30	Fully Face to Face
State	MS	A	26.0101	Biological Sciences	26.0502	Molecular Biology and Microbiology	F1995	30	Fully Face to Face
State	MS	A	26.0101	Biological Sciences	26.0901	Physiology	F1998	30	Fully Face to Face
State	BS	A	14.0501	Biomedical Engineering	14.0501	Biomedical Engineering	F2012	120	Fully Face to Face
State	MS	A	14.0501	Biomedical Engineering	14.0501	Biomedical Devices	F2007	30	Fully Face to Face
State	MS	A	14.0501	Biomedical Engineering	14.0501	Biomedical Engineering	F2012	30	Fully Face to Face
Self	MBT	A	26.0101	Biotechnology	26.0101	Biotechnology - General	F2003	36	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.0301	Accounting	F1965	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	30.1601	Accounting Information Systems	F2000	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.0201	Business Analytics	F2015	120	Fully Face to Face

State	BS	A	52.0201	Business Administration	52.0899	Corporate Accounting and Finance	F2000	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.0701	Entrepreneurship	F2009	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.0801	Finance	F1965	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.0201	General Business	F2009	120	Fully Face to Face
Self	BS	A	52.0201	Business Administration	52.0201	General Business	F2023	120	Online
State	BS	A	52.0201	Business Administration	52.0901	Hospitality, Tourism and Event Management	F2021	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.1001	Human Resource Management	F1965	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.1101	International Business	F1976	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.0201	Management	F1967	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	11.0103	Management Information Systems	F1984	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.1401	Marketing	F1965	120	Fully Face to Face
State	BS	A	52.0201	Business Administration	52.0205	Operations and Supply Chain Management	F2015	120	Fully Face to Face
State	MBA	A	52.0201	Business Administration	52.0201	Business Administration	F1965	42	Hybrid

Self	MBA	A	52.0201	Business Administration	52.0201	Business Administration - General	F2000	42	Hybrid
State	BS	A	14.0701	Chemical Engineering	14.0701	Chemical Engineering	F1970	120	Fully Face to Face
State	MS	A	14.0701	Chemical Engineering	14.0701	Chemical Engineering	F1970	30	Fully Face to Face
State	BA	A	40.0501	Chemistry	40.0501	Chemistry	F1965	120	Fully Face to Face
State	BS	A	40.0501	Chemistry	26.0202	Biochemistry	F1976	120	Fully Face to Face
State	BS	A	40.0501	Chemistry	40.0501	Chemistry	F1965	120	Fully Face to Face
State	MA	A	40.0501	Chemistry	40.0501	Chemistry	F1959	30	Fully Face to Face
State	MS	A	40.0501	Chemistry	40.0501	Chemistry	F1965	30	Fully Face to Face
State	BA	A	5.0203	Chicana and Chicano Studies	5.0203	Chicana and Chicano Studies	F2017	120	Fully Face to Face
State	MA	A	5.0203	Chicana and Chicano Studies	5.0203	Chicana and Chicano Studies	F1991	30	Fully Face to Face
State	BA	A	13.121	Child and Adolescent Development	13.121	Child and Adolescent Development	F1988	120	Fully Face to Face
State	BA	A	13.121	Child and Adolescent Development	13.121	Preparation for Teaching		120	Fully Face to Face

State	MA	A	13.121	Child and Adolescent Development	13.121	Child and Adolescent Development	F1992	30	Fully Face to Face
State	BA	A	16.0301	Chinese	16.0301	Chinese	F1991	120	Fully Face to Face
State	BS	A	14.0801	Civil Engineering	14.0801	Civil Engineering	F1950	120	Fully Face to Face
State	MS	A	14.0801	Civil Engineering	14.0801	Civil Engineering	F1960	30	Fully Face to Face
State	BS	A	30.3501	Climate Science	30.3501	Climate Science	F2010	120	Fully Face to Face
State	BS	A	42.2801	Clinical Mental Health Counseling	42.2801	Clinical Mental Health Counseling	F2021	60	Fully Face to Face
State	BA	A	9.0101	Communication Studies	9.0101	Communication Studies	F1950	120	Fully Face to Face
State	MA	A	9.0101	Communication Studies	9.0101	Communication Studies	F1950	35	Fully Face to Face
State	BA	A	51.0201	Communicative Disorders and Sciences	51.0201	Communicative Disorders and Sciences		120	Fully Face to Face
State	MS	A	11.0199	Computational Linguistics	11.0199	Computational Linguistics	F2014	30	Fully Face to Face
State	BS	A	14.0901	Computer Engineering	14.0901	Computer Engineering	F1985	120	Fully Face to Face
State	MS	A	14.0901	Computer Engineering	14.0901	Computer Engineering	F1988	30	Fully Face to Face

Self	MS	A	14.0901	Computer Engineering	14.0901	Computer Engineering - General	F1988	33	Fully Face to Face
State	BS	A	11.0701	Computer Science	11.0701	Computer Science	F1985	120	Fully Face to Face
State	MS	A	11.0701	Computer Science	11.0701	Computer Science	F1990	30	Fully Face to Face
State	BS	A	11.0199	Computer Science and Linguistics	11.0199	Computer Science and Linguistics - General	F2023	120	Fully Face to Face
State	MA	A	13.1101	Counseling and Guidance	13.1101	Counseling and Guidance - General	F2020	48	Hybrid
State	BA	A	50.0101	Creative Arts	50.0101	Creative Arts	F1977	120	Fully Face to Face
State	MFA	A	23.1302	Creative Writing	23.1302	Creative Writing	F2002	44	Fully Face to Face
Self	MS	A	45.0401	Criminology	45.0401	Global Criminology	F2017	33	Online
State	BA	A	50.0301	Dance	50.0301	Dance	F1984	120	Fully Face to Face
State	BFA	A	50.0301	Dance	50.0301	Dance	F2010	120	Fully Face to Face
Self	MS	A	52.1301	Data Analytics	52.1301	Data Analytics - General	F2018	30	Hybrid
State	MS	A	52.1301	Data Analytics	52.1301	Data Analytics - General	F2020	30	Hybrid
State	BS	A	30.7001	Data Science	30.7001	Data Science	F2022	120	Fully Face to Face
State	MS	A	30.0801	Data Science	30.0801	Data Science - General	F2020	36	Fully Face to Face

Self	MDES	A	50.0499	Design	50.0499	Design	F2023	60	Hybrid
State	BA	A	50.0499	Design Studies	50.0499	Animation/Illustration	F2019	120	Fully Face to Face
State	BA	A	50.0499	Design Studies	50.0499	Graphic Design	F2019	120	Fully Face to Face
State	BA	A	50.0499	Design Studies	50.0499	Industrial Design	F2019	120	Fully Face to Face
State	BA	A	50.0499	Design Studies	50.0499	Interior Design	F2019	120	Fully Face to Face
State	BA	A	40.0699	Earth System Science	40.0699	Earth System Science	F1997	120	Fully Face to Face
State	BS	A	26.131	Ecology and Evolution	26.131	Ecology and Evolution - General	F2018	120	Fully Face to Face
State	BA	A	45.0601	Economics	45.0601	Economics	F1950	120	Fully Face to Face
Self	BA	A	45.0601	Economics	45.0601	Economics	F2022	120	Online
State	BS	A	45.0603	Economics	45.0603	Economics	F1978	120	Fully Face to Face
State	MA	A	45.0603	Economics	45.0603	Applied Economics	F1986	32	Fully Face to Face
State	MA	A	45.0603	Economics	45.0603	Economics	F1964	32	Fully Face to Face
State	MA	A	13.0101	Education	13.1202	Curriculum and Instruction	F1972	30	Fully Face to Face

State	EDD	A	13.0401	Educational Administration, Leadership	13.0401	General	SU2014	60	Hybrid
State	MA	A	13.0401	Educational Leadership	13.0401	Emancipatory School Leadership	F2020	30	Hybrid
State	BS	A	14.1001	Electrical Engineering	14.1001	Electrical Engineering	F1965	120	Fully Face to Face
State	MS	A	14.1001	Electrical Engineering	14.1001	Electrical Engineering	F1974	30	Fully Face to Face
Self	MS	A	14.1001	Electrical Engineering	14.1001	Electrical Engineering - General	F1974	33	Fully Face to Face
State	MS	A	14.0101	Engineering	14.0101	Electronic Materials and Devices	F2011	30	Fully Face to Face
State	MS	A	14.0101	Engineering	14.0101	Engineering	F1950	30	Fully Face to Face
Self	MS	A	14.0101	Engineering	14.0101	Engineering - General	F1950	33	Fully Face to Face
State	MS	A	15.1501	Engineering Management	15.1501	General	F2015	30	Fully Face to Face
State	BS	A	15.0000	Engineering Technology	15.0000	Computer Network System Management		120	Fully Face to Face
State	BS	A	15.0000	Engineering Technology	15.0000	Manufacturing Systems	F1970	120	Fully Face to Face
State	MS	A	15.0000	Engineering Technology	15.0000	Engineering Technology	F2023	30	Fully Face to Face

State	BA	A	23.0101	English	23.0101	Creative Writing	F2009	120	Fully Face to Face
State	BA	A	23.0101	English	23.0101	English	F1950	120	Fully Face to Face
State	BA	A	23.0101	English	23.0101	Preparation for Teaching	F1950	120	Fully Face to Face
State	BA	A	23.0101	English	23.1303	Professional and Technical Writing	F2015	120	Fully Face to Face
State	MA	A	23.0101	English	23.0101	English	F1950	30	Fully Face to Face
State	BA	A	3.0104	Environmental Studies	3.0104	Environmental Studies	F1971	120	Fully Face to Face
State	BA	A	3.0104	Environmental Studies	3.0104	Preparation for Teaching	F1998	120	Fully Face to Face
State	BS	A	3.0104	Environmental Studies	3.0104	Environmental Studies	F1971	120	Fully Face to Face
State	MS	A	3.0104	Environmental Studies	3.0104	Environmental Studies	F1992	30	Fully Face to Face
State	MS	A	30.7104	Finance	30.7104	Finance	F2023	30	Hybrid
State	BS	A	43.0406	Forensic Science	43.0406	Biology	F2006	120	Fully Face to Face
State	BS	A	43.0406	Forensic Science	43.0406	Chemistry	F2006	120	Fully Face to Face
State	BS	A	43.0406	Forensic Science	43.0406	Crime Scene Investigation	F2022	120	Fully Face to Face

State	BS	A	43.0406	Forensic Science	43.0406	Digital Evidence	F2020	120	Fully Face to Face
State	BA	A	16.0901	French	16.0901	French	F1964	120	Fully Face to Face
State	BS	A	45.0702	Geographic Information Science	45.0702	Geographic Information Science	F2023	120	Fully Face to Face
State	BA	A	45.0701	Geography	45.0701	Geography	F1950	120	Fully Face to Face
State	MA	A	45.0701	Geography	45.0701	Geography	F1968	30	Fully Face to Face
State	BS	A	40.0601	Geology	40.0601	Geology	F1965	120	Fully Face to Face
State	MS	A	40.0601	Geology	40.0601	Geology	F1965	30	Fully Face to Face
State	BA	A	30.2001	Global Studies	30.2001	Global Studies	F2006	120	Fully Face to Face
State	BFA	A	50.0409	Graphic Design	50.0409	Graphic Design	F2000	120	Fully Face to Face
State	MA	A	13.0406	Higher Education Leadership	13.0406	Higher Education Leadership	SU2022	30	Hybrid
State	BA	A	54.0101	History	54.0101	History	F1950	120	Fully Face to Face
State	MA	A	54.0101	History	54.0101	History	F1960	30	Fully Face to Face

State	MS	A	30.3101	Human Factors/Ergonomics	30.3101	Human Factors/Ergonomics	F1995	30	Fully Face to Face
State	MS	A	30.3101	Human Factors/Ergonomics	30.3101	User Experience	F2022	30	Fully Face to Face
State	BA	A	24.0103	Humanities	5.0102	American Studies	F2012	120	Fully Face to Face
State	BA	A	24.0103	Humanities	24.0103	Humanities		120	Fully Face to Face
State	BA	A	24.0103	Humanities	24.0101	Liberal Arts	F2012	120	Fully Face to Face
State	BA	A	24.0103	Humanities	38.0201	Religious Studies	F2012	120	Fully Face to Face
State	BS	A	14.3501	Industrial and Systems Engineering	14.3501	Industrial and Systems Engineering	F1965	120	Fully Face to Face
State	MS	A	14.3501	Industrial and Systems Engineering	14.3501	Industrial and Systems Engineering	F1970	30	Fully Face to Face
State	MS	A	14.3501	Industrial and Systems Engineering	14.3501	Industrial and Systems Engineering, Operational Analytics Concentration	F2023	30	Fully Face to Face
State	BS	A	50.0404	Industrial Design	50.0404	Industrial Design - General	F1970	120	Fully Face to Face
Self	MS	A	11.0104	Informatics	11.0104	Informatics - General	F2019	30	Online
Self	BS	A	11.0401	Information Science and Data Analytics	11.0401	Information Science and Data Analytics	F2021	120	Online
State	BS	A	11.0401	Information Science and Data Analytics	11.0401	Information Science and Data Analytics	F2022	120	Hybrid

State	BS	A	14.0101	Interdisciplinary Engineering	14.0101	Interdisciplinary Engineering	F1950	120	Fully Face to Face
State	BA	A	30.9999	Interdisciplinary Studies	30.9999	Interdisciplinary Studies	F2014	120	Fully Face to Face
Self	BA	A	30.9999	Interdisciplinary Studies	30.9999	Educational and Community Leadership	F2021	120	Online
Self	BS	A	30.999	Interdisciplinary Studies	30.999	Health Care Leadership	F2024	120	Online
State	BS	A	30.9999	Interdisciplinary Studies	30.9999	Interdisciplinary Studies	F2014	120	Fully Face to Face
State	MA	A	30.9999	Interdisciplinary Studies	30.9999	Interdisciplinary Studies		30	Fully Face to Face
State	MS	A	30.9999	Interdisciplinary Studies	30.9999	Interdisciplinary Studies		30	Fully Face to Face
State	BFA	A	50.0408	Interior Design	50.0408	Interior Design	F2000	120	Fully Face to Face
State	BA	A	16.0302	Japanese	16.0302	Japanese	F1994	120	Fully Face to Face
State	BS	A	9.0401	Journalism	9.0401	Journalism	F1950	120	Fully Face to Face
State	BS	A	43.0104	Justice Studies	45.0401	Criminology	F2016	120	Fully Face to Face
State	BS	A	43.0104	Justice Studies	43.0104	Justice Studies	F1970	120	Fully Face to Face
State	MS	A	43.0104	Justice Studies	43.0104	General	F1972	33	Fully Face to Face

State	BS	A	31.0501	Kinesiology	31.0501	Kinesiology	F1972	120	Fully Face to Face
State	BS	A	31.0501	Kinesiology	31.0501	Preparation for Teaching	F1972	120	Fully Face to Face
State	MS	A	31.0501	Kinesiology	31.0501	Kinesiology	F1950	30	Fully Face to Face
State	BA	A	24.0101	Liberal Studies	24.0101	Integrated Teacher Education Preparation	F2019	130	Fully Face to Face
State	BA	A	24.0101	Liberal Studies	24.0101	Integrated Teacher Education Program Spanish Bilingual	F2019	131	Fully Face to Face
State	BA	A	24.0101	Liberal Studies	24.0101	Preparation for Teaching		120	Fully Face to Face
State	MLIS	A	25.0101	Library and Information Science	25.0101	Library and Information Science	F1978	43	Online
Self	MLIS	A	25.0101	Library and Information Science	25.0101	Library and Information Science - General	F2000	43	Online
State	BA	A	16.0102	Linguistics	16.0102	Linguistics	F1990	120	Fully Face to Face
State	MA	S	16.0102	Linguistics	16.0102	Linguistics	F1970	30	Fully Face to Face
State	BS	A	26.1302	Marine Biology	26.1302	Marine Biology - General	F2018	120	Fully Face to Face
State	MS	A	30.3201	Marine Science	30.3201	Marine Science	F1980	30	Fully Face to Face
State	MS	A	9.0101	Mass Communications	9.0101	Mass Communications	F1970	30	Fully Face to Face

State	BS	A	14.1801	Materials Engineering	14.1801	Materials Engineering	F1970	120	Fully Face to Face
State	MS	A	14.1801	Materials Engineering	14.1801	Materials Engineering	F1970	30	Fully Face to Face
State	BA	A	27.0101	Mathematics	27.0101	Mathematics	F1950	120	Fully Face to Face
State	BA	A	27.0101	Mathematics	27.0101	Preparation for Teaching (Integrated Teacher Education Program)	F1998	120	Fully Face to Face
State	MA	A	27.0101	Mathematics	27.0101	Mathematics	F1950	33	Fully Face to Face
State	MA	S	27.0101	Mathematics	27.0101	Mathematics Education		30	Fully Face to Face
State	BS	A	14.1901	Mechanical Engineering	14.1901	Mechanical Engineering	F1965	120	Fully Face to Face
State	MS	A	14.1901	Mechanical Engineering	14.1901	Mechanical Engineering	F1970	30	Fully Face to Face
Self	MS	A	14.1901	Mechanical Engineering	14.1901	Mechanical Engineering - General	F1970	33	Fully Face to Face
Self	MS	A	52.0299	Medical Product Development Management	52.0299	Medical Product Development Management - General	F2009	33	Hybrid
State	BS	A	40.0401	Meteorology	40.0401	Meteorology	F1967	120	Fully Face to Face
State	MS	A	40.0401	Meteorology	40.0401	Meteorology		30	Fully Face to Face

State	MA	A	13.0299	Multilingual and Multicultural Literacy Education	13.0299	Multilingual and Multicultural Literacy Education - General	F2023	30	Online
State	BA	A	50.0901	Music	50.0901	Music	F1950	120	Fully Face to Face
State	BM	A	50.0903	Music	50.0903	Composition	F1984	120	Fully Face to Face
State	BM	A	50.0903	Music	50.0903	Jazz Studies	F2006	120	Fully Face to Face
State	BM	A	50.0903	Music	13.1312	Music Education	F1996	132	Fully Face to Face
State	BM	A	50.0903	Music	50.0903	Performance	F2000	120	Fully Face to Face
State	MM	A	50.0901	Music	50.0901	Music - General	F2016	30	Fully Face to Face
Self	MA	A	13.1312	Music Education	13.1312	Music Education - General	SU2016	30	Hybrid
State	BS	A	51.3801	Nursing	51.3801	Pre-Licensure	F1955	120	Fully Face to Face
State	BS	A	51.3801	Nursing	51.3801	RN to BS Nursing		120	Fully Face to Face
State	BS	A	51.3801	Nursing	51.3801	Concurrent Enrollment Program (CEP) ADN to BSN	F2021	120	Hybrid
Self	MS	A	51.3801	Nursing	51.3801	Family Nurse Practitioner	F2017	42	Hybrid
State	MS	A	51.3801	Nursing	51.3801	Nursing	F1965	36	Fully Face to Face
State	DNP	A	51.3818	Nursing Practice	51.3818	Nursing Practice	F2019	37	Hybrid

State	BS	A	30.1901	Nutritional Science	30.1901	Applied Nutrition and Food Sciences	F2018	120	Fully Face to Face
State	BS	A	30.1901	Nutritional Science	30.1901	Dietetics	F1986	120	Fully Face to Face
State	BS	A	30.1901	Nutritional Science	30.1901	Food Management	F2018	120	Fully Face to Face
State	MS	A	30.1901	Nutritional Science	30.1901	Nutritional Science	F1982	30	Fully Face to Face
State	MS	A	51.2306	Occupational Therapy	51.2306	Occupational Therapy		72	Fully Face to Face
State	OTD	A	51.2306	Occupational Therapy	51.2306	Occupational Therapy	SP2023	112	Hybrid
State	BA	A	52.1003	Organizational Studies	52.1003	Organizational Studies - General	F2019	120	Fully Face to Face
State	BS	A	15.1503	Packaging	15.1503	Packaging	F2018	120	Fully Face to Face
State	BA	A	38.0101	Philosophy	38.0101	Philosophy	F1962	120	Fully Face to Face
State	MA	A	38.0101	Philosophy	38.0101	Philosophy	F1950	30	Fully Face to Face
State	BA	A	40.0801	Physics	40.0801	Physics	F1950	120	Fully Face to Face
State	BA	A	40.0801	Physics	40.0801	Preparation for Teaching	F1998	120	Fully Face to Face

State	BS	A	40.0801	Physics	40.0801	Physics	F1966	120	Fully Face to Face
State	MS	A	40.0801	Physics	40.0801	Physics	F1958	30	Fully Face to Face
State	BA	A	45.1001	Political Science	45.1001	Political Science	F1950	120	Fully Face to Face
State	BA	A	42.0101	Psychology	42.0101	Psychology	F1956	120	Fully Face to Face
State	MA	A	42.0101	Psychology	42.0101	Research and Experimental Psychology	F2014	30	Fully Face to Face
State	MS	A	42.0101	Psychology	42.2804	Industrial/Organizational Psychology	F1974	30	Fully Face to Face
State	MPA	A	44.0401	Public Administration	44.0401	Public Administration	F1986	36	Fully Face to Face
State	BS	A	51.2201	Public Health	51.2207	Community Health Education	F2020	120	Fully Face to Face
State	BS	A	51.2201	Public Health	51.2201	Population Data Science	F2020	120	Fully Face to Face
State	BS	A	51.2201	Public Health	51.2201	Public Health - General	F2017	120	Fully Face to Face
Self	BS	A	51.2201	Public Health	51.2201	Public Health	F2023	120	Online
State	MPH	A	51.2201	Public Health	51.2201	Public Health	F1974	42	Fully Face to Face
Self	MPH	A	51.2201	Public Health	51.2201	Public Health - General	F1974	42	Hybrid

State	BS	A	9.0902	Public Relations	9.0902	Public Relations	F1950	120	Fully Face to Face
Self	BS	A	9.0902	Public Relations	9.0902	Public Relations	F2023	120	Online
State	MS	A	40.0899	Quantum Technology	40.899	Quantum Technology	F2023	30	Fullu Face to Face
State	BA	A	9.0701	Radio-Television-Film	9.0701	Radio-Television-Film	F1965	120	Fully Face to Face
State	BS	A	31.0101	Recreation	31.0101	Recreation	F1970	120	Fully Face to Face
State	BS	A	31.0101	Recreation	31.0101	Recreation Management	F2008	120	Fully Face to Face
State	BS	A	31.0101	Recreation	31.0101	Recreation Therapy	F2008	120	Fully Face to Face
State	MS	A	31.0101	Recreation	31.0101	Recreation	F1960	30	Fully Face to Face
State	MS	S	31.0101	Recreation	31.0101	International Tourism		30	Fully Face to Face
State	MS	A	13.1316	Science Education	13.1316	Science Education	F1986	30	Fully Face to Face
State	BA	A	45.0101	Social Science	45.0101	Social Science, Preparation for Teaching (Single Subject)		120	Fully Face to Face
State	BA	A	44.0701	Social Work	44.0701	Social Work	F1982	120	Fully Face to Face
Self	MSW	A	44.0701	Social Work	44.0701	Advanced Standing	SU2021	37	Hybrid

State	MSW	A	44.0701	Social Work	44.0701	Advanced Standing	SU2021	37	Fully Face to Face
State	MSW	A	44.0701	Social Work	44.0701	Social Work	F1970	60	Fully Face to Face
Self	MSW	A	44.0701	Social Work	44.0701	Social Work - General	F2016	60	Hybrid
State	BA	A	45.1101	Sociology	45.1101	Community Change	F1972	120	Fully Face to Face
State	BA	A	45.1101	Sociology	45.1101	Race and Ethnic Studies	F2014	120	Fully Face to Face
State	BA	A	45.1101	Sociology	45.1101	Sociology	F1950	120	Fully Face to Face
State	BS	A	14.0903	Software Engineering	14.0903	Software Engineering	F2004	120	Fully Face to Face
State	MS	A	14.0903	Software Engineering	14.0903	Software Engineering	F2006	30	Fully Face to Face
Self	MS	A	14.0903	Software Engineering	14.0903	Software Engineering - General	F2005	30	Hybrid
State	BA	A	16.0905	Spanish	16.0905	Spanish	F1964	120	Fully Face to Face
State	MA	A	16.0905	Spanish	16.0905	Spanish	F1964	32	Fully Face to Face
State	MA	A	13.1001	Special Education	13.1001	Special Education	F2021	30	Hybrid
Self	MS	A	51.0203	Speech Language Pathology	51.0203	Speech Language Pathology	F2024	66	Hybrid
State	MS	A	51.0203	Speech Language Pathology	51.0203	Speech Language Pathology	F2021	66	Fully Face to Face

State	BS	A	27.0501	Statistics	27.0501	Statistics	F2022	120	Fully Face to Face
State	MS	A	27.0501	Statistics	27.0501	Statistics	F2011	36	Fully Face to Face
Self	MS	A	52.1601	Taxation	52.1601	Taxation - General	F1988	30	Fully Face to Face
State	MAT	A	13.1299	Teaching	13.1299	Critical Bilingual (Spanish) Education	F2022	30	Fully Face to Face
State	MAT	A	13.1299	Teaching	13.1299	Teaching	F2021	30	Fully Face to Face
State	MA	S	13.1401	Teaching English to Speakers of Other Languages (TESOL)	13.1401	Teaching English to Speakers of Other Languages (TESOL)	F1978	30	Fully Face to Face
State	BA	A	50.0501	Theatre Arts	50.0501	Theatre Arts	F1965	120	Fully Face to Face
Self	MS	A	52.0203	Transportation Management	52.0203	Transportation Management	F1995	30	Online
State	MUP	A	4.0301	Urban Planning	4.0301	Urban Planning - General	F1970	48	Fully Face to Face
State	BA	A	5.0299	Women, Gender, and Sexuality Studies	5.0299	Women, Gender, and Sexuality Studies	F2023	120	Fully Face to Face

Discontinued Majors

2024 | 2023 | 2022 | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 | 2012 | 2011

Navigate to a list of CIP Codes and Start Term for Current Degrees and Concentrations or current Majors and Programs, including program requirements. Programs currently suspended are identified as "(Not Accepting Students)" next to their name throughout the academic catalog.

Effective Term	Degree Type	Program Name	Note
Fall 2024	MS	Accountancy	Offered as Accounting and Analytics, MS
Fall 2024	Minor	Ancient and Medieval History	
Fall 2024	Minor	Asian History	
Fall 2024	MS	Clinical Mental Health Counseling, MS	Offered as Clinical Psychology, MS
Fall 2024	BA	Communicative Disorders and Sciences, BA	Offered as Communicative Disorders and Sciences, BS
Fall 2024	Minor	Education Minor	
Fall 2024	MA	Education, Curriculum and Instruction (LACES) Concentration	
Fall 2024	MS	Engineering, Electronic Materials and Devices Concentration	
Fall 2024	Minor	European History	
Fall 2024	Minor	Latin American History	
Fall 2024	Minor	Military History	
Fall 2024	BA	Organizational Studies, BA	
Fall 2024	Minor	Science Minor	
Fall 2024	BA	Sociology, Social Interaction Concentration, BA	
Fall 2024	Minor	United States History	
Fall 2023	Certificate	Collaborative Response to Family Violence Certificate	

Fall 2023	BA	French, Preparation for Teaching, BA	
Fall 2023	Minor	Global Leadership and Innovation Minor	
Fall 2023	Minor	Italian Minor	
Fall 2023	BA	Liberal Studies, Cross-Cultural Studies in Mexican and American Education Concentration, BA	
Fall 2023	Minor	Mathematics Education Minor	
Fall 2023	Minor	Mathematics For K-8 Teachers Minor	
Fall 2023	Minor	Native American Studies Minor	
Fall 2023	BS	Psychology, BS	
Fall 2023	MS	Quality Assurance, MS	Offered as Engineering Technology, MS
Fall 2023	Minor	Science Minor	
Fall 2023	SAGE	Social Science, Preparation for Teaching, BA + Single Subject Credential + Teaching, MAT	
Fall 2023	BA	Sociology, Women, Gender, and Sexuality Studies, BA	Offered as Women, Gender, and Sexuality Studies, BA
Fall 2023	Minor	Transformative Leadership Minor	
Spring 2023	Certificate	Common Core Mathematics (K-8) Teaching Certificate	
Fall 2022	BS	Business Administration, Global Operations Management Concentration, BS	Offered as Business Administration, Operations and Supply Chain Management Concentration, BS
Fall 2022	BA	History & Social Science Teacher Preparation (SSTP), BA (Double BA)	
Fall 2022	MA	Kinesiology, Exercise Physiology Concentration, MA	

Fall 2022	MA	Kinesiology, MA	Offered as Kinesiology, MS
Fall 2022	MA	Kinesiology, Sport Management Concentration, MA	
Fall 2022	MA	Kinesiology, Sport Studies Concentration, MA	
Fall 2022	MS	Mathematics, MS	Offered as Applied Mathematics, MS
Fall 2022	MA	Sociology, MA	
Fall 2022	BS	Applied Mathematics, Statistics Concentration, BS	Offered as Statistics, BS
Fall 2021	BFA	Art, Animation/Illustration Concentration, BFA	Offered as Animation & Illustration, BFA
Fall 2021	MA	Education, Special Education Concentration, MA	Offered as Special Education, MA
Fall 2021	MA	Education, Speech Pathology Concentration, MA	Offered as Speech Language Pathology, MS
Fall 2021	MA	History, History Education Concentration, MA	
Fall 2021	BS	Hospitality, Tourism and Event Management, BS	Offered as Business Administration, Hospitality, Tourism and Event Management Concentration, BS
Fall 2021	Minor	Hotel and Restaurant Minor	
Fall 2021	MS	Kinesiology, Concentration in Athletic Training, MS	
Fall 2021	Certificate	Nurse Educator Certificate	
Fall 2021	MS	Physics, Computational Physics Concentration, MS	
Fall 2021	MS	Physics, Modern Optics Concentration, MS	
Fall 2021	MS	Psychology, Clinical Psychology Concentration, MS	Offered as Clinical Psychology, MS

Fall 2020	BS	Applied Mathematics, Economics and Actuarial Science Concentration, BS	
Fall 2020	BA	Art, Art History and Visual Culture Concentration, BA	Offered as Art History and Visual Culture, BA
Fall 2020	BA	Communication Studies, Preparation for Teaching, BA	
Fall 2020	MA	Education, Counseling and Student Personnel Concentration, MA	Offered as Counseling and Guidance, MA
Fall 2020	MA	Education, Administration and Supervision Concentration, MA	Offered as Educational Leadership, Concentration in Emancipatory School Leadership, MA
Fall 2020	Credential	Educational Leadership, Preliminary Administrative Services Credential	
Fall 2020	Minor	Global Leadership and Innovation Minor	
Fall 2020	MA	Kinesiology, Athletic Training Concentration, MA	
Fall 2020	BS	Public Health, Health Services Administration Concentration, BS	
Fall 2020	MS	Recreation, International Tourism Concentration, MS	
Fall 2020	BA	Social Science, Preparation for Teaching (Multiple Subject), BA	
Fall 2020	BA	Theatre Arts, Preparation for Teaching, BA	
Fall 2019	BS	Athletic Training, BS	
Fall 2019	BA	Art, Concentration in Design Studies, BA	Offered as Design Studies, BA
Fall 2019	Certificate	Big Data (Special Session Program)	
Fall 2019	BA	Humanities, Asian Studies Concentration, BA	
Fall 2019	BA	Humanities, European Studies, BA	
Fall 2019	BA	Humanities, Middle East Studies, BA	

Fall 2019	Minor	News Media Design	
Fall 2019	BS	Nutritional Science, General Concentration, BS	
Fall 2019	BA	Special Major, Organization Studies, BA	Offered as Organizational Studies, BA DISContinued EFF Fall 2024
Fall 2019	MS	Software Engineering, Cybersecurity Concentration, MS	
Fall 2019	MA	Theatre Arts, MA	
Spring 2019	MA	Educational, Higher Education, MA	
Spring 2019	DNP	Doctor of Nursing (Jointly offered through CSU Fresno)	Offered as Nursing Practice, DNP through SJSU only
Fall 2018	BS	Biological Science, Ecology and Evolution Concentration, BS	Offered as Biological Sciences - Ecology and Evolution, BS
Fall 2018	BS	Biological Science, General Concentration, BS	
Fall 2018	BS	Biological Science, Marine Biology, BS	Offered as Biological Sciences - Marine Biology, BS
Fall 2018	MS	Biological Science, General Concentration, MS	
Fall 2018	BS	Environmental Studies, Energy Concentration, BS	
Fall 2018	BS	Environmental Studies, Environmental Impact Assessment, BS	
Fall 2018	BS	Environmental Studies, Environmental Restoration and Resource Management, BS	
Fall 2018	MA	French, MA	
Fall 2018	BS	Nutritional Science, Packaging Concentration, BS	Offered as a Packaging, BS
Fall 2018	MA	Psychology, General Concentration, MA	

Fall 2018	BA	Spanish, Preparation for Teaching, BA	
Fall 2017	MA	Theatre Arts, MA	
Fall 2016	BA	Biological Science, Preparation for Teaching, BA	
Fall 2016	BA	Life Science, Preparation for Teaching, BA	
Fall 2016	BS	Health Science, Gerontology Concentration, BS	
Fall 2016	BS	Health Science, Health Professions Concentration, BS	
Fall 2016	BS	Health Science, Community Health Education Concentration, BS	
Fall 2016	BA	Life Science, Biodiversity Stewardship Concentration, BS	
Fall 2016	BS	Chemistry, Materials Science Concentration, BS	
Fall 2016	BS	Nutritional Science, Food Science and Technology Concentration, BS	
Fall 2015	MS	Engineering, Engineering Management Concentration	Offered as Engineering Management, MS
Fall 2015	BS	Justice Studies, Forensic Science Biology Concentration, BS	Offered as Forensic Science, Biology Concentration, BS
Fall 2015	BS	Justice Studies, Forensic Science Chemistry Concentration, BS	Offered as Forensic Science, Chemistry Concentration, BS
Fall 2013	MS	Recreation, International Tourism Concentration, MS	
Fall 2013	BA	Chemistry, Preparation for Teaching, BA	
Fall 2013	MS	Engineering, Biomedical Devices Concentration, MS	Offered as Biomedical Engineering, Biomedical Devices Concentration, MS and Biomedical Engineering, MS
Fall 2013	BS	Occupational Therapy, BS	
Fall 2012	BA	Religious Studies, BA	

Fall 2012	BS	General Engineering, Bioengineering Concentration, BS	Offered as Biomedical Engineering, BS
Fall 2012	BA	Sociology, Criminology Concentration, BA	
Fall 2012	MA	Sociology, Criminology Concentration, MA	Offered as Criminology, Global Criminology Concentration, MS
Fall 2011	MA	Natural Science, MA	Offered as Science Education, MS

Consult Archived Catalogs for discontinued programs prior to Fall 2011.

Writing in the Disciplines Courses (3 units)

Writing in the Disciplines (WID) courses develop students' abilities to communicate effectively in their major course of study and in their careers. With an emphasis on critical thinking, these upper-division core courses advance students' understanding of the genres, audiences, and purposes of college writing while preparing them for successful communication in their chosen professions.

Minimum Prerequisite: Upper division standing; A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE. Completion of the UDW-DSP is strongly recommended.

Minimum Grade: A minimum grade of "C" or better (C- not accepted).

- AFAM 100W - Writing Workshop 3 unit(s)
- AMS 100W - Writing in the Humanities & Interdisciplinary Arts 3 unit(s)
- ANTH 100W - Writing Workshop 3 unit(s)
- ART 100W - Writing Workshop: Fine Arts 3 unit(s)
- BIOL 100W - Scientific Communication Workshop 3 unit(s)
- CHAD 100W - Writing Workshop 3 unit(s)
- CHEM 100W - Writing Workshop: Chemical Communications 3 unit(s)
- COMM 100W - Writing Workshop: Writing for Influence 3 unit(s)
- CS 100W - Technical Writing Workshop 3 unit(s)
- DSGN 100W - Writing Workshop: Design 3 unit(s)
- ECON 100W - Writing Workshop: Economic Reports 4 unit(s)
- ENGL 100W - Writing Workshop 4 unit(s)
- ENGL 100WB - Written Communication: Business 3 unit(s)
- ENGR 100W - Engineering Reports 3 unit(s)
- ENVS 100W - Environmental Research and Writing 3 unit(s)
- FORL 100W - Writing Workshop 3 unit(s)
- FS 100W - Forensic Science Writing Workshop 3 unit(s)
- GEOG 100W - Writing Workshop 3 unit(s)
- GLST 100W - Writing Workshop 3 unit(s)
- HIST 100W - History Writers' Workshop 3 unit(s)
- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 unit(s)
- JS 100W - Writing Workshop 3 unit(s)
- KIN 100W - Writing Workshop 3 unit(s)
- LLD 100W - Writing Workshop 3 unit(s)
- LLD 100WB - Writing Workshop for Business Students 3 unit(s)
- MCOM 100W - Writing Workshop: Mass Communications 3 unit(s)
- METR 100W - Writing Workshop: Meteorological Reports 3 unit(s)
- MUSC 100W - Written Communication II 3 unit(s)
- NUFS 100W - Writing Workshop 3 unit(s)
- NURS 100WE - Evidence Based Practice Writing Workshop 3 unit(s)
- PH 100W - Writing Workshop 3 unit(s)
- PHYS 100W - Methods of Research and Communication in Physics 3 unit(s)
- POLS 100W - Writing Workshop 3 unit(s)
- PSYC 100W - Writing Workshop 3 unit(s)
- RECL 100W - Writing Workshop 3 unit(s)
- RELS 100W - Writing in the Humanities & Interdisciplinary Arts 3 unit(s)
- SCWK 100W - Writing Workshop 3 unit(s)

- SOCI 100W - Writing Workshop 3 *unit(s)*
- TA 100W - Writing Workshop: Theatre Arts 3 *unit(s)*

Undergraduate Graduation Requirements - Unit Overview

To qualify for a baccalaureate degree, students must satisfy the major degree requirements and the Undergraduate University Graduation Requirements, which include the following minimum degree requirements and 51 units of coursework:

1. Academic Unit Requirements (120 units total with an average 2.0 GPA - "C" or better)
2. General Education Requirements (48 units)
3. American Institutions Requirement (0-6 units) (*may be satisfied in GE Areas C and D*)
4. Physical Education Requirement (0-2 units)
5. Graduation Writing Assessment Requirement (GWAR) 3 unit(s) (*see Writing in the Disciplines*)

Undergraduate Graduation Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Majors and Programs Statistics

Degree Granting Programs

142 Undergraduate Degrees and Concentrations

96 Master's Degrees and Concentrations

4 Doctoral Degrees

30 Blended programs (Spartan Accelerated Graduate Education (SAGE) Scholars

15 Fully Online Programs

As reported to IPEDS - Integrated Postsecondary Education Data System.

- Archives and Records Administration, MARA (No Onsite Component)
- Criminology, Global Criminology Concentration, MS (Non-Mandatory Onsite Component)
- Educational Leadership, EdD (Fully Online) (No Onsite Component)
- Informatics, MS (No Onsite Component)
- Library and Information Science, MLIS (No Onsite Component)
- Multilingual and Multicultural Literacy Education, MA (No Onsite Component)
- Transportation Management, MS (No Onsite Component)

Degree Completion

- Anthropology, BA (SJSU Online) (No Onsite Component)
- Business Administration, General Business Concentration, BS (SJSU Online) (No Onsite Component)
- Economics, BA (SJSU Online) (No Onsite Component)
- Information Science and Data Analytics, BS (SJSU Online) (No Onsite Component)
- Interdisciplinary Studies, Educational and Community Leadership Concentration, BA (SJSU Online) (No Onsite Component)
- Interdisciplinary Studies, Health Care Leadership Concentration, BS (SJSU Online) (No Onsite Component)
- Public Health, BS (SJSU Online) (No Onsite Component)
- Public Relations, BS (SJSU Online) (No Onsite Component)

23 Hybrid Programs

- Aerospace Engineering, MS
- Business Administration (Early Career), MBA
- Business Administration (For Professionals), MBA
- Business Administration, Hospitality, Tourism and Event Management Concentration, BS
- Communication Studies, BA
- Counseling and Guidance, MA
- Data Analytics, MS
- Design, MDes
- Educational Leadership, Concentration in Emancipatory School Leadership, MA
- Educational Leadership, EdD (Hybrid)
- Finance, MS
- Higher Education Leadership, MA
- Information Science and Data Analytics, BS
- Medical Product Development Management, MS

- Music Education, MA
- Nursing, Concurrent Enrollment Program (CEP) ADN to BSN
- Nursing, Family Nurse Practitioner Concentration, MS
- Nursing Practice, DNP
- Occupational Therapy Doctorate, OTD
- Public Health, MPH
- Social Work, MSW
- Software Engineering, MS
- Speech Language Pathology, MS

Non-Degree Granting Programs

5 Added Authorizations

46 Certificates

20 Credentials

128 Minors

Honors

Majors and Programs by College

Click the "Print Degree" icon on a program page to save a PDF on your desktop or to print a physical copy to take advising notes.

Undergraduate students intending to enter a teaching credential program, should view the Teacher Preparation section of the catalog for more information. Students eligible may consider applying to Spartan Accelerated Graduate Education programs. Admission into programs leading to licensure and credentialing does not guarantee that students will obtain a license or credential.

Program learning outcomes for graduate and undergraduate programs contribute to the University's Mission and Institutional Learning Goals.

Watch a short video about SJSU's undergraduate academic programs and highlights of opportunities that are unique to SJSU, including undergraduate research projects, service learning and internship opportunities, and our award-winning CommUniversity program.

View programs sorted by department or program name. Note: Programs owned by multiple colleges (e.g. SAGE programs) are only listed once.

Lucas College and Graduate School of Business

Office: Business Tower 950

Telephone: (408) 924-3400

Emails: College Directory

Website: www.sjsu.edu/cob

Leadership:

Priya Kannan, Dean

Meghna Virick, Associate Dean of Undergraduate Programs

David Czerwinski, Interim Associate Dean of Graduate Programs

Overview

Since 1928, the College of Business has served the business education needs of our community. We provide San José and Silicon Valley with talent, thought leadership and service, ensuring our region's growth in the global marketplace. An institution of opportunity, our accessible, high-value education empowers and transforms the lives of people of all ages and backgrounds. Both our challenging undergraduate curriculum and our innovative graduate program in the Donald and Sally Lucas Graduate School of Business equip graduates with the tools, work ethic and skills to succeed in the ever-changing global economy.

The Donald and Sally Lucas College and Graduate School of Business is the institution of opportunity, providing innovative business education and research for the Silicon Valley region and beyond since 1928. The College offers an accessible, high value education that empowers people of all ages and backgrounds to transform their lives. Faculty and staff are strongly committed to the College's mission; maintain a collegial, inclusive teaching and learning environment; and are dedicated to continuous improvement in all areas of academic achievement, scholarship, teaching and service.

The college is an active member of the San José and Silicon Valley community and provides a talent pool, thought leadership and service that supports the region's growth in the global marketplace. The college is one of the 755 institutions worldwide that are accredited by the prestigious AACSB International, the Association to Advance Collegiate Schools of Business. Fewer than five percent of business programs worldwide have earned the AACSB's certification of excellence. In addition, the college is accredited by the WASC Senior College and University Commission (WSCUC) and the California State Board of Education.

The college is dedicated to equipping graduates with the tools, work ethic and skills to succeed in the ever-changing global economy. This is accomplished through a challenging undergraduate curriculum and an innovative, high quality graduate education in the Donald and Sally Lucas Graduate School of Business.

The Business Honors Practicum

The Business Honors Practicum provides the best students in the College of Business with the opportunity to apply what they have learned in the classroom to real business problems. Students are selected based on a combination of high GPA, prerequisites, and excellent communication skills. Students are typically placed in groups of three to work on projects at Silicon Valley businesses for college course credit. The program also includes international study trips, executive level guest speakers, and networking events. Through seminar sessions students are also exposed to current issues, ideas, and practices in their own disciplines and other fields of business. Students who complete two semesters in the program, have a 3.5 GPA or above and write a scholarly paper qualify to graduate with honors from the College of Business.

Undergraduate Business Education

The college provides a rich undergraduate education through six departments and schools - Accounting and Finance, Global Innovation and Leadership, Hospitality, Tourism and Event Management, Information Systems and Technology, Management, and Marketing and Business Analytics. Infused throughout the undergraduate program are opportunities to develop competencies in a number of key areas -- communication, teamwork, global perspectives, critical thinking, ethics, entrepreneurship, community service, and innovation. The rigorous and challenging curriculum prepares graduates to be future leaders that succeed in the global economy.

The college is building upon its existing expertise in entrepreneurship, management, global finance, accounting, and leadership and organizational change. In addition, the college showcases the best and brightest students through the Business Honors Program and the Thompson Global Internship Program.

Jack Holland Student Success Center

Email: jackholland-center@sjsu.edu

Website: <https://www.sjsu.edu/lcobssc/>

The Jack Holland Student Success Center, located on the garden level of the Boccardo Business Center, provides advice to students about undergraduate business courses and programs. Prospective students are encouraged to talk with advisors about requirements for business major and general education courses. Prospective graduate students are encouraged to meet a graduate advisor in the Graduate Program Office in the Business Tower.

Business Tutoring Centers

Peer Connections supports students through tutoring, mentoring, supplemental instructions, learning assistants and student success events in an inclusive, welcoming environment. Peer Connections serves business students in the

Boccardo Business Center room BBC 303 for 1:1 tutoring and in the Business Tower room BT 053 for group tutoring sessions.

Donald and Sally Lucas Graduate School of Business

The Donald and Sally Lucas Graduate School of Business offers a high-value education with a global focus, innovative programs, and deep ties to Silicon Valley corporations and leaders. Our distinguished faculty provide a relevant business education focusing on excellence in teaching and applied research and serving the needs of diverse students from the Silicon Valley and beyond.

We offer an Early Career MBA program with three tracks: accelerated (12 months), full-time (21-24 months), and part-time (33-36 months). Our MBA for Professionals is a flexible part-time program suitable for working professionals who set their own pace. We also offer a STEM designated Master of Science in Accounting and Analytics, Master of Science in Finance, Master of Science in Taxation, and Master of Science in Transportation Management.

Undergraduate Major(s)

Business Administration, Accounting Concentration, BS

Accounting is a profession concerned with identification, recording, and communication of relevant information in financial statements and reports. Accountants must understand how to prepare financial and tax information, but also analyze, interpret, and safeguard information and systems. The concentration, offered by the Department of Accounting and Finance, includes coursework in financial statement preparation, taxation, auditing, internal control, and costing systems. Offered by the Department of Accounting and Finance, the curriculum prepares students for careers as certified public accountants (CPA), certified management accountants (CMA), certified internal auditors (CIA), and corporate officers for public accounting firms, corporations, governments and not-for-profit organizations.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	40
Concentration Requirements	24
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for the Accounting Foundation Courses must be completed with a grade of "C or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (64 units)

Core Courses (40 units)

Lower Division Courses (10 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*

- BUS2 90 - Business Statistics 3 *unit(s)* (*Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.*)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (24 units)

Additionally, to qualify for a baccalaureate degree in business administration with an Accounting concentration, all courses in the Accounting foundation classes must be completed with a grade of "C" or better. A cumulative 2.0 GPA is required in all business classes.

Accounting Foundation Courses (15 units)

- BUS1 120A - Accounting Information Systems 3 *unit(s)*
- BUS1 121A - Intermediate Accounting I 3 *unit(s)*
- BUS1 121B - Intermediate Accounting II 3 *unit(s)*
- BUS1 122A - Management Accounting and Control Systems 3 *unit(s)*
- BUS1 123A - Taxation of Businesses and Investments 3 *unit(s)*

Required Electives (9 units)

Complete three courses from:

- BUS1 120B - Advanced AIS and IS Risk Assessment 3 *unit(s)*
- BUS1 120D - Accounting Topics in IT Audit 3 *unit(s)*
- BUS1 123C - Taxation of Individuals 3 *unit(s)*
- BUS1 124 - Forensic Accounting 3 *unit(s)*
- BUS1 125 - Special Topics in Accounting 3 *unit(s)*
- BUS1 126 - Advanced Accounting 3 *unit(s)*
- BUS1 127A - Honors Practicum in Corporate Financial Management 3 *unit(s)*
- BUS1 128 - Accounting for Nonprofit Organizations 3 *unit(s)*
- BUS1 129A - Financial Auditing 3 *unit(s)*

- BUS1 129B - Operational Auditing 3 *unit(s)*

University Electives (3 units)

Total Units Required (120 units)

Business Administration, Accounting Information Systems Concentration, BS

This concentration integrates accounting and management information systems disciplines to prepare students for careers in accounting information technology. Offered by the Department of Accounting and Finance, the curriculum focuses on relevant accounting, internal control, and information technology issues. AIS students take courses in database design, networking and data communications, systems analysis and design, and information technology audit, all with an accounting emphasis. Students who complete this concentration enter a fast-growing, dynamic area in accounting. Graduates are attractive to public accounting firms and corporations, and their careers take paths in information technology or internal audit, forensic accounting, risk management, or litigation services. AIS students are qualified to sit for the Computer Information Systems Auditor (CISA) examination.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	40
Concentration Requirements	27
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Accounting Information Systems must be completed with a grade of "C or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (67 units)

Core Courses (40 units)

Lower Division Courses (10 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Business Fundamentals (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*

- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (27 units)

Additionally, to qualify for a baccalaureate degree in business administration with an accounting information systems concentration, all courses in the concentration must be completed with a grade of "C" or better. A cumulative 2.0 GPA is required in all business classes.

Accounting Information Systems Foundation Courses (24 units)

- BUS1 120A - Accounting Information Systems 3 *unit(s)*
- BUS1 120B - Advanced AIS and IS Risk Assessment 3 *unit(s)*
- BUS1 120C - Network Environment and Accounting Controls 3 *unit(s)*
- BUS1 120D - Accounting Topics in IT Audit 3 *unit(s)*
- BUS1 120G - Programming and Systems Development in AIS 3 *unit(s)*
- BUS1 121A - Intermediate Accounting I 3 *unit(s)*
- BUS1 121B - Intermediate Accounting II 3 *unit(s)*
- BUS1 122A - Management Accounting and Control Systems 3 *unit(s)*

Required Electives (3 units)

Complete one course from:

- BUS1 123A - Taxation of Businesses and Investments 3 *unit(s)*
- BUS1 124 - Forensic Accounting 3 *unit(s)*
- BUS1 127A - Honors Practicum in Corporate Financial Management 3 *unit(s)*
- BUS1 129A - Financial Auditing 3 *unit(s)*
- BUS1 129B - Operational Auditing 3 *unit(s)*

Total Units Required (120 units)

Business Administration, Business Analytics Concentration, BS

Business Analytics is a quantitative approach to business, driven by the intelligent use of data and mathematical models. Practitioners leverage methods from statistics and operations research to form insights and make decisions that improve business performance. Business analytics is crucial to a broad range of industries. Banks need to perform credit risk analysis and analyze streaming transactions in real time to quickly identify potential fraud. Utility companies need to analyze energy usage data to gain a better understanding of demand patterns. Retailers need to perform markdown optimizations, firm-wide liquidity management, and understand the social sentiment around their

products and markets to develop more effective campaigns and promotions. Business Analytics, offered by the Department of Marketing and Business Analytics, helps such organizations uncover insights from big data, build models that relate actions to consequences, and perform optimization and simulation analyses that lead to quality decisions and better outcomes in shorter times. The job opportunities for graduates with data analytical skills have never been more numerous. The business analytics concentration is designed to cater to this need by equipping our undergraduates with the skills needed to crunch huge data sets into meaningful information to further facilitate smart business decision-making.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	21
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Business Analytics must be completed with a grade of "C- or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 unit(s)
- ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D)
- ENGL 2 - Critical Thinking and Writing 3 unit(s) (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 unit(s) (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 unit(s) (WID)
- ENGL 100WB - Written Communication: Business 3 unit(s) (WID)
- LLD 100WB - Writing Workshop for Business Students 3 unit(s) (WID)

Major Requirements (64 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 unit(s)
- BUS1 21 - Managerial Accounting 3 unit(s)
- BUS3 80 - Legal Environment of Business 3 unit(s)
- BUS2 90 - Business Statistics 3 unit(s) (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 unit(s)

Business Fundamentals (15 units)

- BUS2 130 - Introduction to Marketing 3 unit(s)
- BUS5 140 - Fundamentals of Operations Management 3 unit(s)
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 unit(s)
- BUS1 170 - Fundamentals of Finance 3 unit(s)
- BUS2 190 - Fundamentals of Business Analytics 3 unit(s)

Business Integration and Perspective Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (21 units)

Additionally, to qualify for a baccalaureate degree in Business Administration with concentration in Business Analytics, all courses in the concentration must be completed with a grade of "C-" or better. A cumulative 2.0 GPA is required in all business classes.

Required Courses (12 units)

- BUS2 193 - Data Mining 3 *unit(s)*
- BUS2 194A - Statistical Analysis 3 *unit(s)*
- BUS2 194B - Prescriptive Analytics in Business 3 *unit(s)*
- BUS2 195B - Data Visualization and Exploration 3 *unit(s)*

Additional Courses (9 units)

Complete three courses from:

- BUS2 132B - Supply Chain Analytics 3 *unit(s)*
- BUS2 137H - Marketing and Business Analytics Honors Practicum 3 *unit(s)*
- BUS2 195A - Spreadsheet Modeling 3 *unit(s)*
- BUS2 195C - Simulation Modeling and Analysis 3 *unit(s)*
- BUS4 116 - Advanced Database Management Systems 3 *unit(s)*
- BUS4 118D - Big Data 3 *unit(s)*

University Electives (3 units)

Total Units Required (120 units)

Business Administration, Corporate Accounting and Finance Concentration, BS

This concentration integrates accounting and finance disciplines to prepare students for careers in corporate financial management. Offered by the Department of Accounting and Finance, the curriculum develops an understanding of how to obtain capital, distribute funds, manage cash flow, evaluate competing projects, and run a firm from a financial perspective. This concentration teaches how to record, analyze and interpret financial information. The curriculum enhances the attractiveness of its graduates to corporate finance groups as entry-level hires, and for the long-term, positions them for roles as controller, treasurer, and chief financial officer. CAF graduates are able to move between accounting and finance careers, increasing their marketability in a field with great opportunities.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	40
Concentration Requirements	27
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Corporate Accounting Finance must be completed with a grade of "C or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90, BUS1 170.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (67 units)

Core Courses (40 units)

Lower Division Courses (10 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Business Fundamentals (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Business Integration and Perspective Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (27 units)

Additionally, to qualify for a baccalaureate degree in business administration with a Corporate Finance Management concentration, all courses in the concentration must be completed with a grade of "C" or better. A cumulative 2.0 GPA is required in all business classes.

Required Accounting Courses (12 units)

- BUS1 120A - Accounting Information Systems 3 *unit(s)*
- BUS1 121A - Intermediate Accounting I 3 *unit(s)*
- BUS1 121B - Intermediate Accounting II 3 *unit(s)*
- BUS1 122A - Management Accounting and Control Systems 3 *unit(s)*

Required Finance Courses (9 units)

- BUS1 171A - Financial Institutions and Markets 3 *unit(s)*
- BUS1 173A - Financial Management: Theory and Policy 3 *unit(s)*
- BUS1 173B - Problems in Financial Management 3 *unit(s)*

Concentration Electives (6 units)

Complete two courses from:

- BUS1 120B - Advanced AIS and IS Risk Assessment 3 *unit(s)*
- BUS1 123A - Taxation of Businesses and Investments 3 *unit(s)*
- BUS1 124 - Forensic Accounting 3 *unit(s)*
- BUS1 125 - Special Topics in Accounting 3 *unit(s)*
- BUS1 126 - Advanced Accounting 3 *unit(s)*
- BUS1 127A - Honors Practicum in Corporate Financial Management 3 *unit(s)* **OR** BUS1 127B - Advanced Honors Practicum 3 *unit(s)*
- BUS1 128 - Accounting for Nonprofit Organizations 3 *unit(s)*
- BUS1 129B - Operational Auditing 3 *unit(s)*
- BUS1 171B - Commercial Banking 3 *unit(s)*
- BUS1 172A - Investment Analysis 3 *unit(s)*
- BUS1 172B - Portfolio Management 3 *unit(s)*
- BUS1 172C - Futures and Options 3 *unit(s)*
- BUS1 173C - Entrepreneurial Finance 3 *unit(s)*
- BUS1 175 - Real Estate Finance 3 *unit(s)*
- BUS1 176 - Business Valuation 3 *unit(s)*
- BUS1 177 - International Business Finance 3 *unit(s)*
- BUS1 179B - Selected Topics in Business Finance 3 *unit(s)*

Total Units Required (120 units)

Business Administration, Entrepreneurship Concentration, BS

The concentration in Entrepreneurship, offered by the School of Global Innovation and Leadership, prepares students with a drive for innovation and the passion to create new businesses to be entrepreneurs or corporate innovators. Students who complete the program will gain a global perspective of entrepreneurship, an understanding of the key management principles across business functions and the need to embrace change in a rapidly evolving environment due to global competition, new technology and changing customer requirements.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	18
University Electives	6
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Entrepreneurship must be completed with a grade of "C- or Better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (61 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 21 - Managerial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspective Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (18 units)

Additionally, to qualify for a baccalaureate degree in business administration with an entrepreneurship concentration, all courses in the concentration must be completed with a grade of "C- or Better".

Required Courses (9 units)

- BUS2 131D - Marketing in New Ventures 3 *unit(s)*
- BUS5 181 - Introduction to Entrepreneurship 3 *unit(s)*
- BUS5 182 - Business Plans for New Ventures 3 *unit(s)*

Concentration Electives (9 units)

Complete Two Courses From:

- BUS5 169A - Honors Seminar 3 *unit(s)*
- BUS5 182A - Startup Founders & Funders 3 *unit(s)*
- BUS5 183 - Global Entrepreneurship 3 *unit(s)*
- BUS5 184A - Management of Innovation 3 *unit(s)*
- BUS5 185 - Family Business Dynamics 3 *unit(s)*
- BUS5 186H - Entrepreneurship Laboratory 3 *unit(s)* (*Instructor permission only*)
- BUS5 186V - Venture Lab 3 *unit(s)*

Additional Elective Courses

Complete one course from the following list or from electives listed above, if not already completed.

- BUS1 173C - Entrepreneurial Finance 3 *unit(s)*
- BUS2 131A - Business to Business Marketing 3 *unit(s)*
- BUS2 131B - Retail Marketing Management 3 *unit(s)*
- BUS2 134C - Social Media Marketing 3 *unit(s)*
- BUS2 136 - Product Development 3 *unit(s)*
- BUS3 153 - Management of Diversity 3 *unit(s)*
- BUS5 146 - Fundamentals of Project Management 3 *unit(s)*
- BUS5 162 - International and Comparative Management 3 *unit(s)*
- BUS5 163A - Negotiating Globally 3 *unit(s)*
- BUS5 163B - Business and Innovation in Emerging Economies 3 *unit(s)*
- BUS5 165A - Global Leadership 3 *unit(s)*
- BUS5 167 - Managing Environmental Issues 3 *unit(s)*
- BUS5 169B - Honors Practicum in Organization and Management 3 *unit(s)*

University Electives (6 units)

Total Units Required (120 units)

Business Administration, Finance Concentration, BS

Students studying finance learn to make decisions in three areas: corporate finance, investments and financial institutions. Corporate finance courses prepare students for financial analysis and planning. The investments area emphasizes decision-making processes required to value securities such as stocks or bonds and teaches principles of managing an investment portfolio. Students study financial institutions, including commercial banks, savings and loan associations, mutual funds, and insurance companies, to understand the function of U.S. and international money and capital markets. Offered by the Department of Accounting and Finance, the curriculum prepares students for careers as financial officers responsible for investment and financing decisions for corporations or financial institutions.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	18
University Electives	6
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Finance must be completed with a grade of "C or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ECON 1A, ECON 1B, ENGL 2, MATH 70, BUS1 20, BUS1 21, BUS2 90, BUS1 170.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

All of the following courses must be completed with a grade of "C" or better prior to taking any upper division major coursework.

- ECON 1A - Principles of Economics: Macroeconomics 3 unit(s)
- ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D)
- ENGL 2 - Critical Thinking and Writing 3 unit(s) (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 unit(s) (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 unit(s) (WID)
- ENGL 100WB - Written Communication: Business 3 unit(s) (WID)
- LLD 100WB - Writing Workshop for Business Students 3 unit(s) (WID)

Major Requirements (61 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 unit(s)
- BUS1 21 - Managerial Accounting 3 unit(s)
- BUS3 80 - Legal Environment of Business 3 unit(s)
- BUS2 90 - Business Statistics 3 unit(s) (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 unit(s)

Upper Division Business Fundamentals Courses (15 units)

- BUS1 170 - Fundamentals of Finance 3 unit(s)
- BUS2 130 - Introduction to Marketing 3 unit(s)

- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (18 units)

Must achieve a grade of "C" or better in the following required courses

Required Courses (9 units)

- BUS1 171A - Financial Institutions and Markets 3 *unit(s)*
- BUS1 172A - Investment Analysis 3 *unit(s)*
- BUS1 173A - Financial Management: Theory and Policy 3 *unit(s)*

Concentration Electives (9 units)

Complete three courses from:

Choose BUS1 127A or BUS1 127B do not take both

- BUS1 127A - Honors Practicum in Corporate Financial Management 3 *unit(s)* **OR** BUS1 127B - Advanced Honors Practicum 3 *unit(s)*
- BUS1 171B - Commercial Banking 3 *unit(s)*
- BUS1 172B - Portfolio Management 3 *unit(s)*
- BUS1 172C - Futures and Options 3 *unit(s)*
- BUS1 172D - Student Managed Investment Fund 3 *unit(s)*
- BUS1 173B - Problems in Financial Management 3 *unit(s)*
- BUS1 173C - Entrepreneurial Finance 3 *unit(s)*
- BUS1 175 - Real Estate Finance 3 *unit(s)*
- BUS1 176 - Business Valuation 3 *unit(s)*
- BUS1 177 - International Business Finance 3 *unit(s)*
- BUS1 179B - Selected Topics in Business Finance 3 *unit(s)*

University Electives (6 units)

Total Units Required (120 units)

Business Administration, General Business Concentration, BS

The General Business concentration, offered by the Department of Marketing and Business Analytics, offers students a broad spectrum of courses to prepare them for careers in small, medium-sized or family businesses and for jobs with companies that train new employees in a specific job largely unrelated to a functional area such as managing a large retail store or servicing technology company's customers.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	18
University Electives	6
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for General Business must be completed with a grade of "C- or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 unit(s)
- ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D)
- ENGL 2 - Critical Thinking and Writing 3 unit(s) (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 unit(s) (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- ENGL 100WB - Written Communication: Business 3 unit(s) (WID)
- COMM 100W - Writing Workshop: Writing for Influence 3 unit(s) (WID)
- LLD 100WB - Writing Workshop for Business Students 3 unit(s) (WID)

Major Requirements (61 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 unit(s)
- BUS1 21 - Managerial Accounting 3 unit(s)
- BUS3 80 - Legal Environment of Business 3 unit(s)
- BUS2 90 - Business Statistics 3 unit(s) (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 unit(s)

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 unit(s)
- BUS5 140 - Fundamentals of Operations Management 3 unit(s)
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 unit(s)
- BUS1 170 - Fundamentals of Finance 3 unit(s)
- BUS2 190 - Fundamentals of Business Analytics 3 unit(s)

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (18 units)

Required Courses (12 units)

Courses selected must include at least one course from the Marketing & Business Analytics (BUS2) department and one course from either the School of Management (BUS3) or School of Global Innovation & Leadership (BUS5). There could be as many as 12 units from any one department and as many as 6 units of advisor approved transfer credit. All these courses require grades of "C-" or better.

Additional Courses (6 units)

Any upper division business courses. Please see an advisor for a current list of acceptable courses. All these courses require grades of "C-" or better.

University Electives (6 units)

Total Units Required (120 units)

Business Administration, General Business Concentration, BS (SJSU Online)

The General Business concentration, offered by the Department of Marketing and Business Analytics, offers students a broad spectrum of courses to prepare them for careers in small, medium-sized or family businesses and for jobs with companies that train new employees in a specific job largely unrelated to a functional area such as managing a large retail store or servicing technology company's customers.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes are delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
SJSU Studies Area R	3
Major Requirements	51

University Electives	6
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units). The following courses must be passed with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
 - (F) Ethnic Studies
- Completion of at least 22 units of the following courses (or equivalents). The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.
 - ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
 - ECON 1B - Principles of Economics: Microeconomics 3 *unit(s) (D)*
 - MATH 70 - Mathematics for Business OR MATH 71 - Calculus for Business and Aviation OR MATH 30 - Calculus I 3 *unit(s) (All B4)*
 - BUS1 20 - Financial Accounting 3 *unit(s)*
 - BUS1 21 - Managerial Accounting 3 *unit(s)*
 - BUS3 80 - Legal Environment of Business 3 *unit(s)*
 - BUS2 90 - Business Statistics 3 *unit(s)*
 - BUS4 91L - Computer Tools for Business 1 *unit(s)*

University Requirements (3 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

- SJSU Studies Area R

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (51 units)

Written Communication (3 units)

- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)*
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (18 units)

Up to 12 units of coursework can be from any one department. The following courses must be completed with grades of "C-" or better.

Required Courses (12 units)

Select at least one course from the Department of Marketing and Business Analytics, and at least one course from either the School of Management or the School of Global Innovation and Leadership. Up to 6 units can be advisor approved transfer credit.

Additional Courses (6 units)

Any upper division business courses. Please see an advisor for a current list of acceptable courses.

University Electives (6 units)

Total Units Required (120 units)

Business Administration, Hospitality, Tourism and Event Management Concentration, BS

The Business Administration BS concentration in Hospitality, Tourism and Event Management (HTEM), offered by the Department of Hospitality, Tourism and Event Management, prepares graduates for leadership roles in food and beverage services, restaurants, hotels, resorts, event planning and management, corporate events management, destination marketing and management, and other travel and tourism business. Students who complete the program will gain a solid foundation of business functions and management coupled with industry-specific professional preparation courses with an emphasis on hands-on experience.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	21
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Management must be completed with a grade of "C- or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent.)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (64 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 21 - Managerial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)*
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Business Fundamentals (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (21 units)

Required Courses (12 units)

- HSPM 1 - Travel to Learn, Learn to Travel 3 *unit(s)*
- HSPM 102 - Hotel & Lodging Operations 3 *unit(s)*
- HSPM 130 - Special Event Planning 3 *unit(s)*
- HSPM 177 - Hospitality Service Management 3 *unit(s)*

Concentration Electives (9 units)

Complete three courses from:

- HSPM 11 - Restaurant Entrepreneurship 3 *unit(s)*
- HSPM 12 - Data Analytics in Restaurant Operations 3 *unit(s)*
- HSPM 86 - Special Events Management in Hospitality 3 *unit(s)*
- HSPM 101 - Multicultural & Intl Issues Hospitality 3 *unit(s)*

- HSPM 111 - Customs and Courtesies in Hospitality 3 *unit(s)*
- HSPM 140 - Corporate Event Management 3 *unit(s)*
- HSPM 141 - Resort and Club Management 3 *unit(s)*
- HSPM 142 - Trade Show and Exhibition Management 3 *unit(s)*
- HSPM 143 - Tourism Destination Marketing and Management 3 *unit(s)*
- HSPM 148 - Wine Appreciation 3 *unit(s)*
- HSPM 149 - Beer Appreciation 3 *unit(s)*
- HSPM 152 - Hotel Catering and Banquet Management 3 *unit(s)*
- HSPM 154 - Revenue Management 3 *unit(s)*
- HSPM 155 - Sustainable Hospitality and Tourism Management 3 *unit(s)*
- HSPM 161 - Cruise Operations and Management 3 *unit(s)*
- HSPM 191 - Hospitality, Tourism and Event Management Internship 1-4 *unit(s)*

University Electives (3 units)

Total Units Required (120 units)

Business Administration, Human Resource Management Concentration, BS

The program offered by the School of Management provides the academic foundation for careers concerned with activities related to creating and sustaining the competitive advantage of organizations through the effective management of human capital. This area of study is concerned with both the strategic and current day-to-day activities in areas such as performance management, human resource planning and information systems, recruitment and staffing, training and employee development, compensation and benefits and union-management relations in an environment that changes rapidly due to competition, globalization, diversity, technology and laws. The program qualifies graduates for positions in private sector, non-profit and public sector organizations.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	18
University Electives	6
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Human Resource Management must be completed with a grade of "C- or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MMATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (61 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 21 - Managerial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (*Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.*)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- BUS3 186 or PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (18 units)

Additionally, to qualify for a baccalaureate degree in business administration with a Human Resource Management concentration, all courses in the concentration must be completed with a grade of "C- or Better".

Required Courses (15 units)

- BUS3 150 - Fundamentals of Human Resource Management 3 *unit(s)*
- BUS3 154 - Workforce Planning, Staffing and Training 3 *unit(s)*
- BUS3 157 - Legal Issues in Human Resource Management 3 *unit(s)*
- BUS3 158 - Compensation and Reward Systems 3 *unit(s)*
- BUS3 159 - Senior Seminar in Human Resource Management 3 *unit(s)*

Additional Courses (3 units)

Complete one course from:

- BUS3 151 - Labor Relations 3 *unit(s)*

- BUS3 152 - Human Resources Analytics 3 *unit(s)*
- BUS3 153 - Management of Diversity 3 *unit(s)*
- BUS3 155 - Performance Management and Development 3 *unit(s)*
- BUS3 155B - Special Topics in Human Resource Management 3 *unit(s)*

University Electives (6 units)

Total Units Required (120 units)

Business Administration, International Business Concentration, BS

The concentration in International Business (IB) is designed to prepare students for today's global business environment. IB as an interdisciplinary program builds capacity around key challenges and opportunities confronting all global businesses, including managing across borders, fostering innovation and entrepreneurship, and developing effective global strategies. In addition students may select an area of specialization, either a business functional area, an industry area, a geographic area of study, or language studies. Study abroad is required with one of three options: 1) a short-term faculty-led program; 2) a semester of study at a foreign university approved by CSU; or 3) an internship through AIESEC or other international internship program. The Director of the School of Global Innovation and Leadership can waive this requirement (e.g., international students need not study abroad). Study abroad courses that are regarded as equivalent can be substituted for IB program course requirements. This interdisciplinary approach provides a foundation for starting an international career. Graduates work in a variety of international areas and industries such as import/export, global operations, marketing, finance, hospitality and tourism, consulting, and project management, in both the private sector as well as governmental and non-governmental organizations.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	24
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for International Business must be completed with a grade of "C- or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (Or equivalent.)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (67 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 21 - Managerial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*

- BUS2 90 - Business Statistics 3 *unit(s)* (*Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.*)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (24 units)

Additional requirements for graduation: to qualify for a baccalaureate degree in business administration with an international business concentration all courses in the concentration must be completed with a grade of "C-" or better.

Required Courses (12 units)

- BUS5 162 - International and Comparative Management 3 *unit(s)*
- BUS5 162A - International Business Strategy 3 *unit(s)*
- BUS5 183 - Global Entrepreneurship 3 *unit(s)*

Complete One Course From:

- BUS5 163A - Negotiating Globally 3 *unit(s)*
- BUS5 163B - Business and Innovation in Emerging Economies 3 *unit(s)*
- BUS5 164 - Doing Business Globally 1-4 *unit(s)*
- BUS5 164A - Doing Business in Japan 3 *unit(s)*
- BUS5 164B - Doing Business in India 3 *unit(s)*
- BUS5 164C - Doing Business in China 3 *unit(s)*

Concentration Electives (12 units)

Select 12 units of concentration electives or an area of specialization

Do not take course if taken as part of required courses

- BUS1 177 - International Business Finance 3 *unit(s)*

- BUS2 133A - International Marketing 3 *unit(s)*
- BUS5 146 - Fundamentals of Project Management 3 *unit(s)*
- BUS5 163A - Negotiating Globally 3 *unit(s)*
- BUS5 163B - Business and Innovation in Emerging Economies 3 *unit(s)*
- BUS5 164 - Doing Business Globally 1-4 *unit(s)*
- BUS5 164A - Doing Business in Japan 3 *unit(s)*
- BUS5 164B - Doing Business in India 3 *unit(s)*
- BUS5 164C - Doing Business in China 3 *unit(s)*
- BUS5 165A - Global Leadership 3 *unit(s)*
- BUS5 169A - Honors Seminar 3 *unit(s)*
- BUS5 169B - Honors Practicum in Organization and Management 3 *unit(s)*
- BUS5 186H - Entrepreneurship Laboratory 3 *unit(s)*

Area of Specialization

Students can choose a set of 12 units of concentration electives or an Area of Specialization from Business Functional Areas, Industry Areas, Area Studies, or Language Studies. In order to complete the Area of Specialization, a student requires a minimum of 9 units, however, one needs to complete a total of 12 units to fulfill the International Business concentration requirements. Hence, the additional 3 units may be taken from the same area of specialization thus making it 12 units. Alternatively, students can choose 3 units from the list of concentration electives as indicated in the course catalog. Consult a business advisor in BBC008 for details on the Areas of Specialization.

Total Units Required (120 units)

Business Administration, Management Concentration, BS

The Management Program, offered by the School of Management, prepares graduates for successful and innovative careers. We emphasize fundamental principles underlying high-performance in diverse organizations at the team, company, and industry levels. We teach analytical tools, decision-making processes, and best practices for leading and managing workplaces that are legally compliant, ethical, and financially sustainable. Attention is focused on evidence-based management, competitive strategy, behavioral science, and stakeholder management.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	18
University Electives	6
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Management must be completed with a grade of "C- or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (Or equivalent.)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)

- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (67 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 21 - Managerial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (*Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.*)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- BUS3 186 or PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (18 units)

Additionally, to qualify for a baccalaureate degree in business administration with a Management concentration, all courses in the concentration must be completed with a grade of "C- or Better".

Required Courses (9 units)

- BUS3 161A - Applied Organizational Behavior 3 *unit(s)*
- BUS3 161B - Organization Theory 3 *unit(s)*
- BUS3 166 - Business, Government, & Society 3 *unit(s)*

Additional Courses (9 units)

Complete One Course From:

- BUS3 150 - Fundamentals of Human Resource Management 3 *unit(s)*
- BUS5 146 - Fundamentals of Project Management 3 *unit(s)*

Complete Two Courses From:

- BUS2 195A - Spreadsheet Modeling 3 *unit(s)*
- BUS2 195B - Data Visualization and Exploration 3 *unit(s)*
- BUS3 149 - Negotiation and Conflict Resolution 3 *unit(s)*
- BUS3 152 - Human Resources Analytics 3 *unit(s)*
- BUS3 153 - Management of Diversity 3 *unit(s)*
- BUS3 154 - Workforce Planning, Staffing and Training 3 *unit(s)*
- BUS3 155 - Performance Management and Development 3 *unit(s)*
- BUS3 165 - Analysis and Design of Teams 3 *unit(s)*
- BUS3 169A - Honors Seminar 3 *unit(s)*
- BUS3 169B - Honors Practicum 3 *unit(s)*
- BUS5 141 - Procurement and Supply Management 3 *unit(s)*
- BUS5 142 - Total Quality Management 3 *unit(s)*
- BUS5 144 - Supply Chain Management 3 *unit(s)*
- BUS5 145 - Operations & Supply Chain Strategy 3 *unit(s)*
- BUS5 147 - Service Operations Management 3 *unit(s)*
- BUS5 148 - Sustainable Operations Management 3 *unit(s)*
- BUS5 162 - International and Comparative Management 3 *unit(s)*
- BUS5 165A - Global Leadership 3 *unit(s)*
- BUS5 167 - Managing Environmental Issues 3 *unit(s)*
- BUS5 181 - Introduction to Entrepreneurship 3 *unit(s)*
- BUS5 183 - Global Entrepreneurship 3 *unit(s)*
- HSPM 102 - Hotel & Lodging Operations 3 *unit(s)*
- HSPM 130 - Special Event Planning 3 *unit(s)*

University Electives (6 units)

Total Units Required (120 units)

Business Administration, Management Information Systems Concentration, BS

The Concentration in Management Information Systems, offered by the School of Information Systems and Technology, merges information technology and business. Students gain practical knowledge and skills in applying technology to address business challenges and take advantage of business opportunities. Graduates of the MIS concentration are in high demand and go on to successful careers in businesses of all kinds and sizes, across all industries, as well as non-profits and public sector organizations.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements

38

Major Preparation	15
Major Core Requirements	40
Concentration Requirements	27
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Management Information Systems must be completed with a grade of "C or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent.)

- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (67 units)

Core Courses (40 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 21 - Managerial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (12 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (27 units)

Additional requirements for graduation: to qualify for a baccalaureate degree in business administration with a management information systems concentration, all courses in the concentration must be completed with a grade of "C" (2.0) or better.

Required Courses (21 units)

- BUS4 92 - Introduction to Business Programming 3 *unit(s)*

- BUS4 110A - Fundamentals of Management Information Systems 3 *unit(s)*
- BUS4 110B - Systems Analysis and Design 3 *unit(s)*
- BUS4 111 - Networking and Data Communications 3 *unit(s)*
- BUS4 112 - Database Management Systems 3 *unit(s)*
- BUS4 119B - Business Strategy and Information Systems 3 *unit(s)*

Complete One Course From:

- BUS4 119A - Practicum in MIS 3 *unit(s)*
- BUS4 119H - Honors Practicum in MIS II 3 *unit(s)*

Additional Courses (6 units)

Complete two courses from:

- BUS4 115 - Advanced Networking and Data Communications 3 *unit(s)*
- BUS4 116 - Advanced Database Management Systems 3 *unit(s)*
- BUS4 118A - Cloud Computing for Data Professionals 3 *unit(s)*
- BUS4 118B - Business Intelligence 3 *unit(s)*
- BUS4 118C - Information Security and Assurance Management 3 *unit(s)*
- BUS4 118D - Big Data 3 *unit(s)*
- BUS4 118H - Honors Practicum in MIS I 3 *unit(s)*
- BUS4 118I - Artificial Intelligence (AI) for Social Good 3 *unit(s)*
- BUS4 118S - Special Topics in MIS 3 *unit(s)*
- BUS4 118W - Web Based Computing 3 *unit(s)*
- BUS5 181 - Introduction to Entrepreneurship 3 *unit(s)*

Total Units Required (120 units)

Business Administration, Marketing Concentration, BS

Business graduates with a Marketing concentration are prepared to pursue careers in small business and retail store management; in product, advertising, pricing, or supply chain management; also direct marketing, customer service, sales, digital and social media marketing, and entrepreneurial and international marketing. The Marketing program, offered by the Department of Marketing and Business Analytics, focuses on the business function concerned with market definition and objectives, product or service development, customer segmentation and product positioning, sales management, advertising and promotion, pricing and distribution.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15
Major Core Requirements	43
Concentration Requirements	21

University Electives 3

Total 120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Marketing must be completed with a grade of "C- or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90, BUS2 130.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent.)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Major Requirements (64 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 21 - Managerial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS3 189 - Strategic Management 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (21 units)

Additional requirements for graduation: to qualify for a baccalaureate degree in business administration with a marketing concentration, all marketing courses must be completed with a grade of "C-" or better. Marketing courses are those numbered in the BUS2 130 - BUS2 139 sequence.

Required Courses (12 units)

- BUS2 134A - Consumer Behavior 3 *unit(s)*
- BUS2 134B - Integrated Marketing Communications 3 *unit(s)*
- BUS2 138 - Marketing Research 3 *unit(s)*

- BUS2 139 - Marketing Management 3 *unit(s)*

Additional Courses (9 units)

Complete three courses from:

- BUS2 131A - Business to Business Marketing 3 *unit(s)*
- BUS2 131B - Retail Marketing Management 3 *unit(s)*
- BUS2 131D - Marketing in New Ventures 3 *unit(s)*
- BUS2 132B - Supply Chain Analytics 3 *unit(s)*
- BUS2 133A - International Marketing 3 *unit(s)*
- BUS2 133B - Relationship Marketing: Pacific Rim 3 *unit(s)*
- BUS2 133C - International Marketing: Developing Nations 3 *unit(s)*
- BUS2 134C - Social Media Marketing 3 *unit(s)*
- BUS2 135 - Sales Management 3 *unit(s)*
- BUS2 135B - Services Marketing 3 *unit(s)*
- BUS2 135C - Entertainment Marketing 3 *unit(s)*
- BUS2 135D - Sports Marketing 3 *unit(s)*
- BUS2 136 - Product Development 3 *unit(s)*
- BUS2 137A - Soft Skills 3 *unit(s)*
- BUS2 137H - Marketing and Business Analytics Honors Practicum 3 *unit(s)*
- BUS2 137S - Special Topics in Marketing 3 *unit(s)*
- HSPM 142 - Trade Show and Exhibition Management 3 *unit(s)*
- HSPM 154 - Revenue Management 3 *unit(s)*

University Electives (3 units)

Total Units Required (120 units)

Business Administration, Operations and Supply Chain Management Concentration, BS

The Operations and Supply Chain Management (OSCM) concentration, offered by the School of Global Innovation and Leadership, prepares graduates with state-of-the-art knowledge of managing operations in a global context. The focus will be on contemporary issues related to operations function which are of relevance in a firm's ability to effectively collaborate with its supply chain partners in order to remain competitive in a global economy. The OSCM concentration prepares students for careers with global manufacturing, service, and consulting organizations by offering a variety of courses in management of materials, quality, supply chains, services, global projects, and operations strategy. As part of this concentration, students have an opportunity to interact with OSCM-related industry professionals as facilitated by the Global Operations Management Association, an OSCM-affiliated student club at SJSU. They can also work on real-world consulting projects or explore internships in operations as facilitated by Silicon Valley Center of Operations and Technology Management.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements

38

Major Preparation	15
Major Core Requirements	43
Concentration Requirements	21
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Concentration Requirements for Operations and Supply Chain Management must be completed with a grade of "C- or better". The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 unit(s)
- ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D)
- ENGL 2 - Critical Thinking and Writing 3 unit(s) (A3) (or equivalent.)
- MATH 70 - Mathematics for Business 3 unit(s) (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)

Writing in the Disciplines (3 units)

- COMM 100W - Writing Workshop: Writing for Influence 3 unit(s) (WID)
- ENGL 100WB - Written Communication: Business 3 unit(s) (WID)
- LLD 100WB - Writing Workshop for Business Students 3 unit(s) (WID)

Major Requirements (64 units)

Core Courses (43 units)

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 unit(s)
- BUS1 21 - Managerial Accounting 3 unit(s)
- BUS3 80 - Legal Environment of Business 3 unit(s)
- BUS2 90 - Business Statistics 3 unit(s) (Transfer students with STAT 95 (C or better) may use this in lieu of BUS2 90.)
- BUS4 91L - Computer Tools for Business 1 unit(s)

Upper Division Business Fundamentals Courses (15 units)

- BUS1 170 - Fundamentals of Finance 3 unit(s)
- BUS2 130 - Introduction to Marketing 3 unit(s)
- BUS2 190 - Fundamentals of Business Analytics 3 unit(s)
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 unit(s)
- BUS5 140 - Fundamentals of Operations Management 3 unit(s)

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 unit(s)
- BUS4 188 - Business Systems and Policy 3 unit(s)
- BUS3 189 - Strategic Management 3 unit(s)
- PHIL 186 - Professional and Business Ethics 3 unit(s) (S)
- One non-business global perspectives course in Area V 3 unit(s)

Concentration Requirements (21 units)

All concentration courses must be passed with a C- or better.

Required Courses (15 units)

- BUS5 142 - Total Quality Management 3 *unit(s)*
- BUS5 144 - Supply Chain Management 3 *unit(s)*
- BUS5 146 - Fundamentals of Project Management 3 *unit(s)*

Complete Two Courses From:

- BUS5 141 - Procurement and Supply Management 3 *unit(s)*
- BUS5 142B - Business Process Management 3 *unit(s)*
- BUS5 144B - Operations & Supply Chain Analytics 3 *unit(s)*
- BUS5 145 - Operations & Supply Chain Strategy 3 *unit(s)*
- BUS5 147 - Service Operations Management 3 *unit(s)*

Concentration Electives (6 units)

Complete two courses from the following list or from required courses listed above if not already counted:

- BUS2 131A - Business to Business Marketing 3 *unit(s)*
- BUS3 153 - Management of Diversity 3 *unit(s)*
- BUS5 141B - Transportation & Supply Chain Logistics 3 *unit(s)*
- BUS5 145B - Healthcare Operations Management 3 *unit(s)*
- BUS5 148 - Sustainable Operations Management 3 *unit(s)*
- BUS5 162 - International and Comparative Management 3 *unit(s)*
- BUS5 163A - Negotiating Globally 3 *unit(s)*
- BUS5 163B - Business and Innovation in Emerging Economies 3 *unit(s)*
- BUS5 165A - Global Leadership 3 *unit(s)*
- BUS5 167 - Managing Environmental Issues 3 *unit(s)*
- BUS5 169A - Honors Seminar 3 *unit(s)*
- BUS5 169B - Honors Practicum in Organization and Management 3 *unit(s)*
- BUS5 183 - Global Entrepreneurship 3 *unit(s)*
- BUS5 184A - Management of Innovation 3 *unit(s)*

University Electives (3 units)

Total Units Required (120 units)

Undergraduate Minor(s)

Business Minor

A minor consists of a minimum of 15 units and may be designed to fit the needs of a student majoring in any non-business department. The Minor in Business, offered by the Lucas College and Graduate School of Business, must include at least BUS1 20N and BUS3 160, and nine additional units. Six units must be completed in residence. Some majors have specific minor requirements.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Core Courses (15 units)

- BUS1 20N - Survey of Accounting 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- 2 Lower Division or Upper Division Courses 6 *unit(s)*
- 1 Upper Division Course 3 *unit(s)*

Total Units Required (15 units)

Master(s)

Accounting and Analytics, MS

- Educational Objectives
- Benefits of the MSAA
- Admissions Requirements
- Program of Study Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Accounting and Analytics (MSAA), a STEM designated program, offered by the Lucas College and Graduate School of Business, prepares students for careers in public and corporate accounting. Students develop and apply an analytics-oriented mindset to audit, tax, advisory and managerial scenarios. Course work is structured to combine academic learning and accounting internship experience in a well-rounded preparation for careers in professional accounting. The program balances technical study and preparation for the CPA exam with business soft skills needed for recruitment and a career in accounting. The MSAA is a full-time, 9-month, daytime program, although students with flexible employers may be able to study part-time. The 30-unit program, taught online and on the SJSU campus, admits both accounting and non-accounting undergraduate majors in a competitive process. Non-accounting undergraduate students have the opportunity to prepare for the program in a 15-unit summer certificate program preceding Fall enrollment in the MSAA.

For more information, see the Lucas Graduate School of Business website.

Purpose of the MSAA Program

The MSAA program prepares students for a career in public or corporate accounting by providing them with a strong foundation for both public accounting certification (CPA) and career advancement.

Educational Objectives

Students with an MSAA degree should recognize and apply the accounting principles and procedures involved in measuring, recording, summarizing, and reporting financial and non-financial data for business organizations; taxation concepts; auditing and control procedures; and the ethical and legal challenges in an accounting career. They should communicate effectively, both orally and in writing, evaluate information technology, and demonstrate analytical proficiency.

Benefits of the MSAA

The program is designed for people with undergraduate degrees in accounting who want to further their studies in accounting while acquiring an additional 30 units needed for CPA licensure. It also allows liberal arts/sciences/business undergraduates who are interested in changing careers an entrance into the accounting profession. The course work and optional internship provide opportunities to build a framework for a successful and rewarding career in public or corporate accounting.

Admissions Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the Lucas Graduate School of Business to obtain admission into the MSAA program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Admission to Classified Standing

To be fully accepted into the MSAA in classified standing, an applicant must have:

- A four-year bachelor's degree from an accredited college or university in the United States or from a recognized institution if the degree was earned outside of the United States.
- A preferred GPA of 3.0 or better (on a 4.0 scale) in the last 60 semester units or 90 quarter units of course work (Professional Development and Certificate Program course work cannot be included in this calculation);
- (Optional) A Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE) exam. Applicants with a GPA below 3.0 are strongly encouraged to take the GMAT or GRE to demonstrate their readiness for graduate work.
- A personal statement explaining the MSAA applicant's career objectives.
- A resume detailing the applicant's professional and academic experiences.
- Two letters of recommendation.

In addition, a personal interview may be conducted for each applicant.

Requirements for Admission to Conditionally Classified Standing

If not accepted into classified standing, the applicant may qualify for conditionally classified status. Ambitious, highly motivated applicants with undergraduate degrees in liberal arts, sciences, or business will need to complete the

intensive Certificate in Accounting Fundamentals program during the summer semester before matriculation into the MSAA degree program. The individual admission letter will explain the required terms and conditions for attaining Classified standing.

Program of Study Requirements

To receive the Master of Science in Accounting and Analytics, students must complete 30 semester units of prescribed course work. Specific program policies include the following:

Prerequisites

The curriculum requires completion of two lower-division and five upper-division prerequisite courses (3 semester hours or equivalent) within the past five years with an average grade in the courses of "B" (3.0) or better prior to the start of the program. All upper-division prerequisites must be completed at an accredited four-year university in the U.S. The seven prerequisite courses are:

1. Introductory Financial Accounting (lower-division course, gateway to upper-division courses 2-6)
2. Intermediate Financial Accounting I
3. Intermediate Financial Accounting II
4. Accounting Information Systems
5. Management Accounting and Control Systems
6. Tax Factors of Business and Investment Decisions
7. Statistics (lower division course)

Students may be conditionally admitted into the program pending completion of the prerequisite courses. Students must, at a minimum, submit completion and/or verification of enrollment in Introductory Financial Accounting and Statistics by the published GAPE document submission deadline. One way to fulfill the rest of the prerequisites is to enroll in the Certificate in Accounting Fundamentals at SJSU to complete courses 2-6 with an average of B in the summer preceding Fall enrollment in the MSAA program.

Course Requirements

The 30 semester units of coursework include three core courses (9 units) required of all students, two core courses (6 units) from a list of designated topics, a culminating experience course (3 units), and four elective MSAA courses (12 units). Electives may be taken from offerings in the MST and/or MBA programs with approval from the MSAA director.

Internship

The courses in the MSAA program are designed to prepare students for internships with public accounting firms, governmental agencies, and corporations. From January through March, students may enroll in an internship course, BUS 220K. Students in this course gain practical work experience, participate in firm training programs, and attend roundtable meetings to discuss topics such as professional ethics, working in the professional environment, communication effectiveness, marketing professional services, and planning for professional growth.

Graduation Writing Assessment Requirement

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Culminating Experience

Plan B (Project)

All students must complete a comprehensive project integrating business functional and interdisciplinary areas. The MSAA culminating experience is incorporated into BUS 220A - Financial Statement Analysis. An individual written project report is required and may take the form of a field study, business plan, research project, or business simulation.

Maintenance of 3.0 GPA

Students must maintain a grade point average of 3.0 or better on all graduate-level coursework. Students who receive grades of C-, D, F, or U in any business graduate course must repeat that course to achieve a grade of C or better.

Other University Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Students must comply with all other graduate requirements contained in this catalog.

Prerequisite Courses

Any of the prerequisite courses may be waived through evidence of recent prior equivalency (within the last five years with a grade of "B" or better)

- Introductory Financial Accounting
- Intermediate Financial Accounting I
- Intermediate Financial Accounting II
- Accounting Information Systems
- Management Accounting and Control Systems
- Tax Factors of Business and Investment Decisions
- Statistics

Master's Requirements (30 units)

Required Courses (15 units)

If more than two courses are taken, two fulfill the core course requirements and all others are electives.

- BUS 220J - Business Communications & Ethics 3 *unit(s)* (GWAR)
- BUS 220U - Information Technology Audit 3 *unit(s)*
- BUS 220Z - Advanced Data Science and Analytics for Accounting 3 *unit(s)*

Choose two courses:

Choose two of the following courses in consultation with the graduate advisor. If more than two courses are taken, two fulfill the core course requirements and all others are electives.

- BUS 220H - Auditing: Concepts and Practice 3 *unit(s)*
- BUS 220P - Taxation of Individuals and Flow-Through Entities 3 *unit(s)*
- BUS 220R - Data Analytics for Accounting 3 *unit(s)*
- BUS 220S - Financial Reporting and Analysis III 3 *unit(s)*
- BUS 220V - Special Topics in Accounting 3 *unit(s)*

Electives (12 units)

12 units of elective courses selected in consultation with the graduate advisor.

- BUS 220I - Forensic Accounting 3 *unit(s)*
- BUS 220K - Accounting Practicum 3 *unit(s)*
- BUS 220M - Accounting Ethics 3 *unit(s)*
- BUS 220X - Business Analysis and Valuation Using Financial Statements 3 *unit(s)*
- BUS 223A - Tax Research and Decision Making 3 *unit(s)*
- BUS 223G - Taxation of Business Entities 3 *unit(s)*
- BUS 225L - Accounting for Income Taxes 3 *unit(s)*
- BUS 250 - Law and Ethics 3 *unit(s)*
- BUS 253 - Negotiation and Conflict Management 3 *unit(s)*
- BUS 286 - Project Management 3 *unit(s)*

Culminating Experience (3 units)

Plan B (Project)

- BUS 220A - Financial Statement Analysis 3 *unit(s)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Business Administration (Early Career), MBA

- Purpose of the MBA Program
- Educational Objectives
- Benefits of the MBA
- Lucas MBA Programs
- Admission Requirements
- Program of Study Requirements for the MBA Degree
- Early Career MBA Requirements (42 units)
- Program Learning Outcomes

Purpose of the MBA Program

The MBA program provides a strong foundation of business concepts, models, skills, and methods with which to face immediate and future managerial challenges. The basic program aims at creating a general management (rather than a functional specialist) perspective. Pragmatic in approach, the focus is on problem analysis and synthesis, decision making, action taking throughout the functional areas of business, and understanding the international context of business. The Lucas Graduate School of Business prepares students through a broad curriculum of functional, cross-functional and integrative core courses, and elective courses.

Educational Objectives

The educational objectives of the Donald and Sally Lucas Graduate School of Business MBA are threefold: to provide a solid base of interdisciplinary business theories and techniques; to apply theory and analytic tools to the practical improvement of organizational performance; to explore personal beliefs and values as they affect ethical and economic organizational practices. Key processes involve: investigating opportunities and problems; defining causes or contributing factors to problems, including those that cut across organizational units; generating alternatives from which feasible programs of action are selected and implemented; and monitoring and changing, where necessary, the progress of enacted decisions.

These skills are developed using a combination of approaches including the case method, experiential exercises, computer simulations, team projects, and problem sets. Students are expected to develop competencies both as action-oriented leaders and as logical decision-makers.

Benefits of the MBA

The program is geared to the professionally-oriented person who aspires to move into middle management or to undertake greater managerial responsibility. It is designed to aid those who have the capabilities or potential to be action initiators. The MBA program accommodates students with a variety of educational and work backgrounds.

Lucas MBA Programs

Although SJSU grants one unique MBA degree, the Lucas Graduate School of Business offers two distinct MBA programs that differ according to student profile, flexibility, degree completion time, admission cycle, and cost.

The Early Career MBA program is tailored to students who have fewer than five years of work experience. Classes are conducted in a hybrid format with a mix of in-person classes on the SJSU campus and online classes. Classes meet during evenings and Saturdays in eight-week sessions during the Fall and Spring semesters and five-week sessions during the Summer semester. The Early Career Program offers three tracks that vary in length and pace: Accelerated Track (12 months), Full-Time Track (21-24 months), and Part-Time Track (33-36 months).

The MBA for Professionals is designed for working professionals with more than five years of work experience. This program offers a high level of flexibility in order to accommodate professionals with demanding life and work schedules. Classes are conducted in a hybrid format with a mix of in-person classes held on the SJSU campus and online classes. Classes meet during evenings and Saturdays in eight-week sessions during the Fall and Spring semesters and five-week sessions during the Summer semester.

Admission Requirements

Requirements for Admission to Classified Standing

To be fully accepted into classified standing, an applicant must have:

1. A bachelor's degree from an accredited university in the U.S. or the equivalent of a U.S. bachelor's degree earned from a recognized institution if the degree was earned outside of the U.S.
2. A preferred GPA of 3.0 on a 4.0 scale.
3. Taken an English language proficiency examination if the previously earned degree was from an institution in which the principal language of instruction was not English. The university's minimum entrance score for the TOEFL is 213 (computer-based) or 80 (internet-based). The minimum score required on the IELTS is 6.5, and the minimum PTE score is 53.
4. (Optional) Taken the GMAT or GRE. Applicants with a GPA below 3.0 are strongly encouraged to take the GMAT or GRE to demonstrate their readiness for graduate work.
5. Completed two prerequisite courses (Economics and Statistics, with a grade of B or higher). The economics course may be one of the following: Introduction to Microeconomics, Introduction to Macroeconomics, or Principles of Economics. An applicant may be admitted to the MBA program on a conditional admission basis prior to completion of these two courses but will need to provide proof of completion of all prerequisites before the day of orientation.
6. A personal statement of one to two pages explaining how an MBA can help to achieve the applicant's career objectives.
7. A resume detailing the applicant's professional and academic experiences.
8. (Optional) Two letters of recommendation.

The Lucas School does not follow a set formula for determining admission to the MBA programs. Our goal is to admit academically qualified candidates who show potential for completing the program and advancing into a successful business career. We seek to admit students whose backgrounds will enable them to contribute to the academic excellence and the demographic, educational, and experiential diversity of each class.

An applicant's academic profile - undergraduate major and institution, any graduate-level work, GPA, and optional GMAT or GRE scores - is a major factor in the admission decision. Other important areas of evaluation include a personal statement, work experience, letters of recommendation, writing skills, and extracurricular, community, and professional activities. From this overall review, we assess an applicant's potential for success and compatibility with our MBA program.

The average GPA of admitted candidates is 3.3. Ideally, a candidate's GPA will be at 3.0 or above. Many circumstances may exist which offer an explanation for a GPA below 3.0; candidates are encouraged to submit a statement of explanation if this is the case. However, please note that an absolute minimum GPA of 2.5 is required for graduate admission at San José State University.

Program of Study Requirements for the MBA Degree

To earn the MBA degree, all students must satisfy the following requirements:

Business Prerequisite Courses

- Introduction of Macroeconomics (at SJSU this course is ECON 1A) or Introduction to Microeconomics (at SJSU this course is ECON 1B) or Principles of Economics
- Statistics (at SJSU this course is BUS2 90)

Advanced Management Courses (Core Courses)

In both the Early Career MBA and the MBA for Professionals, all students are required to successfully complete eleven core courses for a total of thirty-semester units. Although the total units of core courses are identical across the two MBA programs, the composition of the core curriculum is slightly different to account for the differences in student academic and professional profiles. The advanced graduate courses (core courses - 30 units) ensure breadth in general management knowledge and help the student to develop mastery in applying essential business skills.

Elective Courses

Four elective courses (12 units) are required of all students. As an elective course, a graduate student can select a maximum of one upper-division business undergraduate course (100-level) OR one graduate non-business course (200-level). Enrollment in such an elective course is conditional on the written approval by the MBA Director and it is specific to a given course and a given semester.

Comprehensive Project

The comprehensive project is incorporated in the Strategic Thinking course (BUS 290). The comprehensive project is a culminating experience integrating business functional areas and interdisciplinary perspectives. An individual written project report is required and an oral examination may be included. The project may take the form of a field study, research project, business simulation, or a strategic plan for an organization, as assigned by the Business 290 instructor. Students must receive an overall equivalent grade of "B" or better on the comprehensive project and may be given a maximum of two opportunities to satisfy requirements.

Graduation Writing Assessment Requirement

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Maintenance of 3.0 GPA

Students must maintain a grade point average of 3.0 or better on all graduate-level coursework. Students who receive grades of "C-", "D", "F", or "WU" in any business graduate course must repeat that course to achieve a grade of "C" or better.

Transfer Credit

Subject to the approval of the Donald and Sally Lucas Graduate School of Business MBA Program Director and validation by the College of Graduate Studies, students may transfer a maximum of twelve-semester units of business graduate course work from another regionally accredited institution. Grades in the transfer courses must be "B" or better.

Other University Requirements

Students must comply with all other graduate requirements contained in this catalog.

Early Career MBA Requirements (42 units)

Advanced Management Courses (Breadth Requirements) (27 units)

- BUS 201 - Business Communications 1 unit(s)
- BUS 210 - Developing and Managing People 3 unit(s) (GWAR)
- BUS 220 - Financial Accounting 3 unit(s)
- BUS 230 - Marketing Management 3 unit(s)
- BUS 250 - Law and Ethics 3 unit(s)
- BUS 260 - Managerial Decision Analysis 3 unit(s)
- BUS 265 - Silicon Valley Experience 2 unit(s)
- BUS 270 - Financial Management 3 unit(s)
- BUS 280 - Operations and Supply Chain Management 3 unit(s)

Complete One Course From:

- BUS 202 - Managing in the Global Economy 3 unit(s)
- BUS 244 - Information Technologies for Business: Essentials & Emerging 3 unit(s)

Electives (12 units)

Four elective courses. Students may take a maximum of one 100-level business course OR 200-level non-business course with written approval of the MBA director.

Culminating Experience (3 units)

Plan B (Project)

- BUS 290 - Strategic Thinking 3 unit(s)

Total Units Required (42 units)

Business Administration (For Professionals), MBA

- Purpose of the MBA Program
- Educational Objectives
- Benefits of the MBA
- Lucas MBA Programs
- Admission Requirements
- Program of Study Requirements for the MBA Degree
- MBA for Professionals Requirements (42 units)
- Program Learning Outcomes

Purpose of the MBA Program

The MBA program provides a strong foundation of business concepts, models, skills, and methods with which to face immediate and future managerial challenges. The basic program aims at creating a general management (rather than a functional specialist) perspective. Pragmatic in approach, the focus is on problem analysis and synthesis, decision making, action taking throughout the functional areas of business, and understanding the international context of

business. The Lucas Graduate School of Business prepares students through a broad curriculum of functional, cross-functional and integrative core courses, and elective courses.

Educational Objectives

The educational objectives of the Donald and Sally Lucas Graduate School of Business MBA are threefold: to provide a solid base of interdisciplinary business theories and techniques; to apply theory and analytic tools to the practical improvement of organizational performance; to explore personal beliefs and values as they affect ethical and economic organizational practices. Key processes involve: investigating opportunities and problems; defining causes or contributing factors to problems, including those that cut across organizational units; generating alternatives from which feasible programs of action are selected and implemented; and monitoring and changing, where necessary, the progress of enacted decisions.

These skills are developed using a combination of approaches including the case method, experiential exercises, computer simulations, team projects, and problem sets. Students are expected to develop competencies both as action-oriented leaders and as logical decision-makers.

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Admission Requirements

Requirements for Admission to Classified Standing

To be fully accepted into classified standing, an applicant must have:

1. A bachelor's degree from an accredited university in the U.S. or the equivalent of a U.S. bachelor's degree earned from a recognized institution if the degree was earned outside of the U.S.
2. A preferred GPA of 3.0 on a 4.0 scale.

3. Taken an English language proficiency examination if the previously earned degree was from an institution in which the principal language of instruction was not English. The university's minimum entrance score for the TOEFL is 213 (computer-based) or 80 (internet-based). The minimum score required on the IELTS is 6.5, and the minimum PTE score is 53.
4. (Optional) Submitted GMAT or GRE scores. Applicants with a GPA below 3.0 are strongly encouraged to take the GMAT or GRE to demonstrate their readiness for graduate work.
5. Completed two prerequisite courses (Economics and Statistics, with a grade of B or higher). The economics course may be one of the following: Introduction to Microeconomics, Introduction to Macroeconomics, or Principles of Economics. An applicant may be admitted to the MBA program on a conditional admission basis prior to completion of these two courses but will need to provide proof of completion of all prerequisites before the day of orientation.
6. A personal statement of one to two pages explaining how an MBA can help to achieve the applicant's career objectives.
7. A resume detailing your professional and academic experiences.
8. (Optional) Two letters of recommendation.

The Lucas School does not follow a set formula for determining admission to the MBA programs. Our goal is to admit academically qualified candidates who show potential for completing the program and advancing into a successful business career. We seek to admit students whose backgrounds will enable them to contribute to the academic excellence and the demographic, educational, and experiential diversity of each class.

An applicant's academic profile - undergraduate major and institution, any graduate-level work, GPA, and optional GMAT or GRE scores - is a major factor in the admission decision. Other important areas of evaluation include a personal statement, work experience, letters of recommendation, writing skills, and extracurricular, community, and professional activities. From this overall review, we assess an applicant's potential for success and compatibility with our MBA program.

The average GPA of admitted candidates is 3.3. Ideally, a candidate's GPA will be at 3.0 or above. Many circumstances may exist which offer an explanation for a GPA below 3.0; candidates are encouraged to submit a statement of explanation if this is the case. However, please note that an absolute minimum GPA of 2.5 is required for graduate admission at San José State University.

Program of Study Requirements for the MBA Degree

To earn the MBA degree, all students must satisfy the following requirements:

Business Prerequisite Courses

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- Statistics (at SJSU this course is BUS2 90)

Advanced Management Courses (Core Courses)

In both the Early Career MBA and the MBA for Professionals, all students are required to successfully complete eleven core courses for a total of thirty-semester units. Although the total units of core courses are identical across the two MBA programs, the composition of the core curriculum is slightly different to account for the differences in student academic and professional profiles. The advanced graduate courses (core courses - 30 units) ensure breadth in general management knowledge and help the student to develop mastery in applying essential business skills.

Elective Courses

Four elective courses (12 units) are required of all students. As an elective course, a graduate student can select a maximum of one upper-division business undergraduate course (100-level) OR one graduate non-business course (200-level). Enrollment in such an elective course is conditional on the written approval by the MBA Director and it is specific to a given course and a given semester.

Comprehensive Project

The comprehensive project is incorporated in the Strategic Thinking course (BUS 290). The comprehensive project is a culminating experience integrating business functional areas and interdisciplinary perspectives. An individual written project report is required and an oral examination may be included. The project may take the form of a field study, research project, business simulation, or a strategic plan for an organization, as assigned by the Business 290 instructor. Students must receive an overall equivalent grade of "B" or better on the comprehensive project and may be given a maximum of two opportunities to satisfy requirements.

Graduation Writing Assessment Requirement

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Maintenance of 3.0 GPA

Students must maintain a grade point average of 3.0 or better on all graduate-level course work. Students who receive grades of "C-", "D", "F", or "WU" in any business graduate course must repeat that course to achieve a grade of "C" or better.

Transfer Credit

Subject to the approval of the Donald and Sally Lucas Graduate School of Business MBA Program Director and validation by the College of Graduate Studies, students may transfer a maximum of twelve-semester units of business graduate course work from another regionally accredited institution. Grades in the transfer courses must be "B" or better.

Other University Requirements

Students must comply with all other graduate requirements contained in this catalog.

MBA for Professionals Requirements (42 units)

Advanced Management Courses (Breadth Requirements) (27 units)

- BUS 200L - Leadership Communication 2 *unit(s)*
- BUS 210 - Developing and Managing People 3 *unit(s)* (GWAR)
- BUS 220 - Financial Accounting 3 *unit(s)*
- BUS 230 - Marketing Management 3 *unit(s)*
- BUS 250 - Law and Ethics 3 *unit(s)*
- BUS 260 - Managerial Decision Analysis 3 *unit(s)*

- BUS 265P - Silicon Valley Experience for Professionals 1 *unit(s)*
- BUS 270 - Financial Management 3 *unit(s)*
- BUS 280 - Operations and Supply Chain Management 3 *unit(s)*

Complete One Course From:

- BUS 202 - Managing in the Global Economy 3 *unit(s)*
- BUS 203 - International Experience for American Executives 3 *unit(s)*
- BUS 244 - Information Technologies for Business: Essentials & Emerging 3 *unit(s)*

Electives (12 units)

Four elective courses. Students may take a maximum of one 100-level business course OR 200-level non-business course with written approval of the MBA director.

Culminating Experience (3 units)

Plan B (Project)

- BUS 290 - Strategic Thinking 3 *unit(s)*

Total Units Required (42 units)

Note: Four elective courses must be taken in addition to the Advanced Management Courses (Core Courses) in order to achieve the total of 42 semester units. A graduate student can select a maximum of one upper-division business undergraduate course OR one graduate non-business course conditional upon the written approval of a given course and a given semester by the MBA Director. Enrollment in BUS 203 is conditional on the approval of the MBA Director and the BUS 203 instructor.

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional & Global Engagement. Registration and enrollment in a Special Session course or program must use the special session application form and will follow special session fee and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the Professional Education website for more information.

Finance, MS

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Finance (MSF) program, offered by the Lucas College and Graduate School of Business, prepares students for careers in finance units of non-financial firms. The program emphasizes the knowledge

necessary to succeed in corporate finance roles. It teaches students to develop an evidence-based mindset and apply technical finance concepts to corporate financial planning & analysis problems. The course work is structured to combine accounting and finance knowledge, as well as provide experience with the relevant technology and prepare well rounded professionals for careers in corporate finance roles. In addition to technical and analytical skills, the program emphasizes the development of communication skills, professional development, and career readiness.

The 30-unit MSF program offers two tracks depending on the academic pace desired by the students. The full-time track allows students to complete the MSF within 12 months and the part-time track allows students to complete the degree within 24 months. This program accommodates professionals with demanding life and work schedules. The MSF program is taught using a hybrid delivery format combining online and in-person class sessions. Classes meet evenings and Saturdays in eight-week sessions year-round. In-person class sessions are held on the SJSU campus. The MSF is open to candidates who graduated with business or nonbusiness majors.

Admissions Requirements

MSF candidates must meet all of the university admission requirements.

To be fully accepted into classified standing, the following conditions must be met:

- A bachelor's degree from an accredited university in the U.S. or the equivalent of a U.S. bachelor's degree earned from a recognized institution if the degree was earned outside of the U.S.
- A preferred GPA of 3.2 on a 4.0 scale.
- An English language proficiency examination if the previously earned degree was from an institution in which the principal language of instruction was not English. The university's minimum entrance score for the TOEFL is 213 (computer-based) or 80 (internet-based). The minimum score required on the IELTS is 6.5, and the minimum PTE score is 53.
- A personal statement of one to two pages explaining how an MSF would help to achieve the applicant's career objectives.
- A resume detailing the candidate's professional and academic experiences.
- (Optional) Two letters of recommendation.
- The GMAT or GRE are not required but strongly recommended for applicants with GPAs less than 3.2 on a 4.0 scale. Scores at the 50th percentile in both the quantitative and verbal sections of either exam are considered competitive.

Prerequisites for Clear Admission

Students must complete the following SJSU courses or their equivalents:

- BUS1 170 - Fundamentals of Finance
- BUS2 90 - Business Statistics

Requirements for Advancement to Candidacy

A student must maintain an overall grade point average (GPA) of 3.0 at all times, otherwise she or he will be placed on academic probation and required to raise the overall GPA above the 3.0 minimum during the subsequent semester (failing to do so will result in disqualification from the program).

The student must complete with a grade of C or better at least 9 units towards the degree, and meet all other university requirements, including GVAR, before being advanced to candidacy.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement. This requirement is satisfied by taking BUS 220A.

Culminating Experience

The culminating experience will take place in the capstone course BUS 270D - Case Studies in Corporate Finance. The course focuses on the study of corporate finance problems integrating finance theory and business practice. Topics include assessing financial condition; valuation, cash flow and capital budgeting analysis; and decision-making pertaining to working capital, capital expenditures, capital allocation, capital structure, payout policy, IPOs, mergers, acquisitions, divestitures and corporate governance. The students are assigned a complex case study based on publicly available data which integrate accounting & financial knowledge, technology, and corporate strategical considerations. Students may propose themselves a case study based on actual private or publicly available data, conditional on the approval of the course instructor and program director. Students work on the case study and write a report in a professional format summarizing their analysis and findings. An oral presentation is also required.

Master's Requirements (30 units)

Core Courses (18 units)

- BUS 200F - Leadership Communication for Finance Professionals 2 *unit(s)*
- BUS 220 - Financial Accounting 3 *unit(s)*
- BUS 220A - Financial Statement Analysis 3 *unit(s)*
- BUS 265F - Silicon Valley Experience for Finance Professionals 1 *unit(s)*
- BUS 270 - Financial Management 3 *unit(s)*
- BUS 270A - Financial Planning and Analysis 3 *unit(s)*
- BUS 270C - Financial Modeling and Data Visualization 3 *unit(s)*

Elective Courses (9 units)

Complete 3 courses. Students may include up to two BUS elective courses in the MBA or MSAA programs subject to approval by program directors.

- BUS 222 - Profit Planning and Control 3 *unit(s)*
- BUS 270B - Financial Derivatives for Corporate Finance 3 *unit(s)*
- BUS 273 - Business Valuation 3 *unit(s)*

Culminating Experience (3 units)

- BUS 270D - Case Studies in Corporate Finance 3 *unit(s)* (GWAR)

Total Units Required (30 units)

Taxation, MS

- Admissions Requirements
- Program of Study Requirements for the Master of Science in Taxation
- Requirements for Advancement to Graduate Candidacy
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Taxation (MST) Program is a 30-unit program designed to provide individuals with the conceptual understanding and sound technical knowledge necessary to compete successfully in the ever-changing tax world. It is appropriate for individuals already working in public accounting, a corporate tax department, a law practice or government service. College graduates with an accounting degree who wish to pursue a career in taxation and/or meet the 150 unit requirement to become a CPA will also benefit from the program. (State fee schedule does not apply.)

More information can be found on the Lucas Graduate School of Business Website: sjsu.edu/lucasgsb/prospective-students/mst.

Admissions Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MST program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE.

Requirements for Admission to Classified Standing

- Completed the following undergraduate courses (or equivalent) prior to admission.
 - BUS1 20 - Financial Accounting
 - BUS1 21 - Managerial Accounting
 - BUS1 121A - Intermediate Accounting I
 - BUS1 121B - Intermediate Accounting II
 - BUS1 123A - Taxation of Businesses and Investments

These requirements may be fulfilled at any U.S. university or community college. If your undergraduate degree is in Accounting from a U.S. university, you have satisfied the course prerequisites.

- A four-year bachelor's degree from an accredited college or university in the United States or from a recognized institution if the degree was earned outside of the United States.

- A GPA of 3.0 or better (on a 4.0 scale) in your last 60 semester units or 90 quarter units of course work (Professional Development and Certificate Program course work cannot be included in this calculation).
- Unless one of several GMAT waivers is met (see list below), a Graduate Management Admission Test (GMAT) or the Graduate Record Examination (GRE) exam. Scores at the 50th percentile in both the quantitative and verbal sections of the exam are considered competitive. The GMAT/GRE requirement may be waived if the applicant meets one of the following criteria:
 1. SJSU student or alumni.
 2. Accounting degree (or equivalent) from any California State University (CSU) or University of California (UC).
 3. Passed all parts of the CPA exam (in the United States).
 4. Passed the Enrolled Agent exam administered by the IRS.
 5. Scored 145 or higher in the LSAT exam.
 6. Has a GPA of at least 3.2 from an accredited U.S. university AND completed at least three years of full-time work experience in taxation. An interview with the MST Director and/or a letter from the supervisor attesting to type of work responsibilities may be required.
 7. Has a GPA of at least 3.75 from an accredited U.S. university. An interview with the MST Director may be required.
 8. Earned a Master's degree or Ph.D. from an accredited institution in the U.S.

Program of Study Requirements for the Master of Science in Taxation

Core Taxation Courses

Six core taxation courses (18 units) are required of all students. Of the core courses, two must be selected from a list of designated topic areas (business entities and multijurisdictional taxation); see below for details.

Elective Courses

Students complete a minimum of 12 units of taxation elective courses.

Graduation Writing Assessment Requirement

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. For the MST Program, the required writing course is BUS 223A.

Culminating Experience

The culminating experience is a comprehensive individual written project incorporated into the capstone course, BUS 223H - Tax Policy Capstone. An oral examination may be included.

Maintenance of 3.0 GPA

Students must maintain a grade point average of 3.0 or better on all graduate-level course work. Students who receive grades of "C-", "D", "F", or "U" in any business graduate course must repeat that course to achieve a grade of "C" or better.

Transfer Credit

Subject to the approval of the MST Program Director, students may transfer a maximum of nine semester units of business graduate course work from another accredited institution to be applied to advanced level course work requirements. Grades in the transfer courses must be "B" or better. MST courses taken via "Open University" are treated as transferred into the MST Program (and thus count toward the maximum of nine semester units of transferable course work).

Other University Requirements

Students must comply with all other graduate requirements contained in this catalog.

Requirements for Advancement to Graduate Candidacy

Students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MST degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional & Global Engagement. Registration and enrollment in a Special Session course or program will follow the special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the Professional Education website for more information.

Master's Requirements (30 units)

Required Core (15 units)

- BUS 223A - Tax Research and Decision Making 3 *unit(s)* (GWAR)
- BUS 223F - Tax Accounting Methods/Periods 3 *unit(s)*
- BUS 223G - Taxation of Business Entities 3 *unit(s)*

Business Entities Elective (3 units)

Choose one of the following courses in consultation with graduate advisor:

- BUS 223B - Taxation of Partnerships 3 *unit(s)*
- BUS 225B - Taxation of Corporate Reorganizations 3 *unit(s)*
- BUS 225G - Taxation of S Corporations 3 *unit(s)*
- BUS 225S - Consolidated Returns 3 *unit(s)*

Multijurisdictional Taxation Elective (3 units)

Choose one of the following courses in consultation with graduate advisor:

- BUS 225C - International Tax - US Corporations with Foreign Activities 3 *unit(s)*
- BUS 225F - State Taxation Fundamentals 3 *unit(s)*
- BUS 225P - Advanced International Tax - US Corporations 3 *unit(s)*
- BUS 225U - Fundamentals of Transfer Pricing 3 *unit(s)*
- BUS 225W - Introduction to International Taxation 3 *unit(s)*
- BUS 225X - International Taxation - US and Foreign Individuals 3 *unit(s)*

Electives (12 units)

Complete 12 units from:

- BUS 223B - Taxation of Partnerships 3 *unit(s)*
- BUS 225A - Taxation of Estates and Trusts 3 *unit(s)*
- BUS 225B - Taxation of Corporate Reorganizations 3 *unit(s)*
- BUS 225C - International Tax - US Corporations with Foreign Activities 3 *unit(s)*
- BUS 225E - Data Analytics and Security 3 *unit(s)*
- BUS 225F - State Taxation Fundamentals 3 *unit(s)*
- BUS 225G - Taxation of S Corporations 3 *unit(s)*
- BUS 225H - Taxation of Property Transactions 3 *unit(s)*
- BUS 225I - Tax Practices, Penalties and Procedures 3 *unit(s)*
- BUS 225K - Advanced Individual Taxes 3 *unit(s)*
- BUS 225L - Accounting for Income Taxes 3 *unit(s)*
- BUS 225P - Advanced International Tax - US Corporations 3 *unit(s)*
- BUS 225Q - Tax Practicum 3 *unit(s)*
- BUS 225S - Consolidated Returns 3 *unit(s)*
- BUS 225U - Fundamentals of Transfer Pricing 3 *unit(s)*
- BUS 225V - Tax Considerations for High Tech Companies 3 *unit(s)*
- BUS 225W - Introduction to International Taxation 3 *unit(s)*
- BUS 225X - International Taxation - US and Foreign Individuals 3 *unit(s)*
- BUS 227A - Individual Tax Compliance 1 *unit(s)*
- BUS 227B - Ethics for Tax Practitioners 1 *unit(s)* (*Note: Course counts towards the required ethics courses to become a CPA in California*)
- BUS 227C - Tax Symposium 1 *unit(s)* (*Note: Topic changes each time offered; may be taken more than once.*)
- BUS 227D - Employment Taxation and the Modern Workforce 1 *unit(s)*
- BUS 227E - Foundation for Understanding Taxation 1 *unit(s)*
- BUS 227F - Personal and Business Leadership Skills for Tax Practitioners 1 *unit(s)* (*Note: Course counts towards the required ethics courses to become a CPA in California*)
- BUS 280IS - Independent Study 1-6 *unit(s)*

Culminating Experience (3 units)

Plan B (Project)

- BUS 223H - Tax Policy Capstone 3 *unit(s)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the graduate advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Transportation Management, MS

- Admission Requirements
- Requirements for Advancement to Candidacy
- University Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Transportation Management (MSTM), offered by the Lucas Graduate School of Business with support from the Mineta Transportation Institute, is a fully accredited, 30-unit program that takes two and half or three years to complete as a part-time student. The curriculum consists of six required courses, two electives, and a two-course culminating capstone experience.

The curriculum is led by nationally recognized instructors who are academic or industry experts. The MSTM is fully accredited by the Association to Advance Collegiate Schools of Business (AACSB).

Live, online classes are held on weekday evenings, allowing students to work full time while earning their degrees. Students generally take one course at a time, one night per week, for each ten-class session, for a total of four classes per year.

Admission Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the Special Session MS, Transportation Management degree program. See the GAPE Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE. For these requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Information.

Admission to the Department

Applicants who meet university and program requirements will be considered for classified admission. Admission to the Special Session MS, Transportation Management degree program requires the following (more details about these requirements are provided at the "Admissions" tab from transweb.sjsu.edu/education/graduate):

- A bachelor's degree from an accredited university in the U.S. or the equivalent of a U.S. bachelor's degree earned from a recognized institution if the degree was earned outside of the U.S.
- A preferred 3.0 (on a 4.0 scale) grade point average (GPA) in the last 60 semester units or 90 quarter units of study. An absolute minimum GPA of 2.5 is required for graduate admission at SJSU.
- A statement of purpose explaining how a Master of Science in Transportation Management will help you to achieve your career objectives (500 to 800 words).

- A resume detailing your professional and academic experiences.
- A letter of recommendation written by a supervisor who managed you in paid or volunteer work or by a university instructor who taught you. Letters should include an evaluation of your writing and analysis skills.
- For students who did not earn a 4-year bachelor's degree, master's degree, or Ph.D. from an institution in which the principal language of instruction was English: scores from an English language proficiency examination. The university minimum entrance score for the TOEFL is 213 (computer-based) or 80 (internet-based); the minimum score required on the IELTS is 6.5, and the minimum PTE score is 53.
- Applicants with a GPA below 3.0 may submit GMAT or GRE scores to demonstrate their readiness for graduate work.

Admission in Conditionally Classified Standing

Applicants not accepted into classified standing may qualify for conditionally classified status. The individual admission notification will explain required coursework, terms and conditions for removing deficiencies and attaining classified standing.

Requirements for Advancement to Candidacy

Candidacy denotes that the student is fully qualified to complete the final stages of the MS - Transportation Management. In order to achieve candidacy, students must meet the university requirements for candidacy, as detailed in the Graduate Policies and Procedures section. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Students disqualified from the MSTM program must follow the Disqualification and Probation - Graduate Students procedures in the SJSU catalog. It is the policy of the Donald and Sally Lucas Graduate School of Business not to readmit disqualified graduate students after a second disqualification.

Transfer Credit

With the approval of the MSTM Program Director, the Donald and Sally Lucas Graduate School of Business Associate Dean for Graduate Programs, and the SJSU Associate Vice President for Graduate Studies and Research, students may transfer a maximum of nine units of related graduate course work from another accredited university in the United States to satisfy elective course requirements. Grades in the transfer courses must be "B" or better. Extension course work from other institutions is not acceptable.

MTM courses taken via SJSU's "Open University" are treated as transferred into the MSTM program (and thus count toward the maximum of nine units of transferable coursework).

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

MTM 201 serves as the GWAR requirement for this program.

Culminating Experience

Plan B (Project)

The program's culminating experience is incorporated into MTM 283 and MTM 290. Students use these courses to design and then carry out an individual, comprehensive capstone project.

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional & Global Engagement. Registration and enrollment in a Special Session course or program must use the special session application form and will follow special session fee and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the Professional Education website for more information.

Master's Requirements (30 units)

Required Core (18 units)

- MTM 201 - Transportation Systems and Society 3 *unit(s)* (GWAR)
- MTM 202 - Introduction to Transportation Funding and Finance 3 *unit(s)*
- MTM 203 - Transportation Marketing and Communications Management 3 *unit(s)*
- MTM 214 - Transportation Policy and Regulation 3 *unit(s)*
- MTM 215 - Transportation Planning and Project Development 3 *unit(s)*
- MTM 217 - Leadership and Management of Transportation Organizations 3 *unit(s)*

Electives (6 units)

Complete two courses from:

- MTM 226A - Transportation Emergency Management 3 *unit(s)*
- MTM 226B - Transportation Security Management 3 *unit(s)*
- MTM 226C - Transportation Safety and Compliance Management 3 *unit(s)*
- MTM 236 - Managing Technology Innovations in Transportation 3 *unit(s)*
- MTM 245 - High-Speed and Intercity Rail: Planning & Design 3 *unit(s)*
- MTM 246 - High-Speed and Intercity Rail Operations/Engineering 3 *unit(s)*
- MTM 250 - Sustainable & Resilient Transportation Management 3 *unit(s)*
- MTM 260 - Project Management in Transportation 3 *unit(s)*

Culminating Experience (6 units)

Plan B (Project)

- MTM 283 - MSTM Capstone - Project Design 3 *unit(s)*
- MTM 290 - MSTM Capstone - Evaluation Report 3 *unit(s)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the MSTM Program Director. With prior approval from the Program Director, students may count towards the elective requirement one graduate or upper-division undergraduate course (3 units) from another SJSU program.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 3.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Students must comply with all other graduate requirements contained in this catalog.

Basic Certificate(s)

Innovation & Entrepreneurship Certificate

This Certificate in Innovation & Entrepreneurship will enable SJSU undergraduate students majoring in Business as well as non-Business disciplines to gain hands-on, experiential training in innovation and entrepreneurship with low barriers to entry. This certificate is offered by the School of Global Innovation and Leadership.

University Basic Certificate Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

Required course (3 units)

- BUS5 181 - Introduction to Entrepreneurship 3 *unit(s)*

Practicum courses (6 units)

Complete two courses:

- BUS5 182 - Business Plans for New Ventures 3 *unit(s)*
- BUS5 186H - Entrepreneurship Laboratory 3 *unit(s)*
- BUS5 186V - Venture Lab 3 *unit(s)*

Total Units Required (9 units)

Students are strongly encouraged to participate in these programs:

- Silicon Valley Innovation Challenge (SVIC): BUS5 181, BUS5 186V
- ZinnStarter Program: BUS5 186V, BUS5 182
- Eminent Speaker series & Workshops: All courses
- SV Business Plan Competition (SVBPC): BUS5 182

Advanced Certificate(s)

Accounting Fundamentals Certificate

The Accounting Fundamentals Certificate, offered by the Lucas Graduate School of Business, is an intensive program providing a broad foundation of concepts and practices in financial reporting, managerial accounting, accounting information systems and corporate taxation. Over the course of one semester, it covers essential topics needed both for a career in accounting and for graduate study. The program is taught in its entirety during the summer, with each course taught in either two- or five-week sessions. The program is designed for both non-matriculated students and those satisfying entrance requirements for both the MS in Accounting and Analytics program. As this certificate is comprised of fundamental accounting knowledge and skills, students entering MSAA program without an undergraduate degree in accounting will be required to complete this certificate before enrolling in MSAA classes.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (15 units)

- BUS 220B - Financial Reporting and Analysis I 3 *unit(s)*
- BUS 220C - Accounting Information Systems I 3 *unit(s)*
- BUS 220E - Financial Reporting and Analysis II 3 *unit(s)*
- BUS 220F - Management Accounting and Control Systems 3 *unit(s)*
- BUS 220G - Tax Factors of Business and Investment Decisions: Theory and Practice 3 *unit(s)*

Total Units Required (15 units)

Advanced Accounting Topics Certificate

The Advanced Accounting Topics Certificate, offered by the Lucas Graduate School of Business, provides an in-depth study of topics useful for CPA exam preparation and a career in accounting. It supplements coursework in the Certificate in Accounting Fundamentals and in the MSAA program with advanced issues and topics relevant for a career in accounting. Specialized issues covered in the certificate program deepen understanding of accounting practice, broaden career preparation and better equip students for the CPA examination.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (12 units)

Complete 12 units from:

- BUS 220S - Financial Reporting and Analysis III 3 *unit(s)*
- BUS 220H - Auditing: Concepts and Practice 3 *unit(s)*
- BUS 220U - Information Technology Audit 3 *unit(s)*
- BUS 220I - Forensic Accounting 3 *unit(s)*
- BUS 220V - Special Topics in Accounting 3 *unit(s)*
- BUS 220X - Business Analysis and Valuation Using Financial Statements 3 *unit(s)*
- BUS 220M - Accounting Ethics 3 *unit(s)*
- BUS 220A - Financial Statement Analysis 3 *unit(s)*

Total Units Required (12 units)

Advanced Global Leadership Certificate

The Advanced Global Leadership Certificate, offered by the Lucas Graduate School of Business, is a focused program designed for those who want to develop their global leadership skills and embark upon a career that will involve global work. This skill set has become a highly valued commodity in an environment that is growing increasingly globalized, but lags in the human capital necessary to succeed in this new environment.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

- BUS 262A - Global Leadership and Innovation 3 *unit(s)*

- BUS 262B - Global Leadership Development 3 *unit(s)*
- BUS 268 - Managing Across Cultures 3 *unit(s)*

Total Units Required (9 units)

Advanced Taxation Certificate

The Advanced Certificate in Taxation, offered by the Lucas Graduate School of Business, provide an in-depth study of topics to help a tax practitioner advance in his/her career or develop a specialization. The coursework supplements prior graduate study in the tax area, in essence, serving as a post-Master's program.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

Complete three courses from below in consultation with MST program director.

Any course listed for the International or High Technology Taxation Certificates.

- BUS 225A - Taxation of Estates and Trusts 3 *unit(s)*
- BUS 225G - Taxation of S Corporations 3 *unit(s)*
- BUS 225I - Tax Practices, Penalties and Procedures 3 *unit(s)*
- BUS 225K - Advanced Individual Taxes 3 *unit(s)*

Total Units Required (9 units)

Business Analytics Certificate

The Business Analytics Certificate, offered by the Lucas Graduate School of Business, is an intensive program, designed for business professionals and graduate students who want to transform terabytes of data into useful and timely business intelligence that will be used to develop knowledge-driven business decisions, whether the practitioner's functional area is marketing, operations, finance, strategy, international business or human resources.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (12 units)

Analytics Core Courses (6 units)

Complete two courses:

- BUS 235A - Introduction to Business Analytics 3 *unit(s)*
- BUS 235F - Forecasting for Business Analytics 3 *unit(s)*
- BUS 260 - Managerial Decision Analysis 3 *unit(s)*

Data Core Courses (6 units)

- BUS 235C - Data Mining for Business Analytics 3 *unit(s)*
- BUS 235E - Data Visualization and Management 3 *unit(s)*

Total Units Required (12 units)

High Technology Taxation Certificate

The advanced certificates in taxation, offered by the Lucas Graduate School of Business, provide an in-depth study of topics to help a tax practitioner advance in his/her career or develop a specialization. The coursework supplements prior graduate study in the tax area, in essence, serving as a post-Master's program.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

Complete three courses from below in consultation with MST program director.

Any course listed for the International Taxation Certificate.

- BUS 223B - Taxation of Partnerships 3 *unit(s)*
- BUS 225B - Taxation of Corporate Reorganizations 3 *unit(s)*
- BUS 225E - Data Analytics and Security 3 *unit(s)*
- BUS 225F - State Taxation Fundamentals 3 *unit(s)*
- BUS 225S - Consolidated Returns 3 *unit(s)*

- BUS 225V - Tax Considerations for High Tech Companies 3 *unit(s)*
- BUS 227C - Tax Symposium 1 *unit(s)* (3 *units required*)
- BUS 227D - Employment Taxation and the Modern Workforce 1 *unit(s)* (3 *units required*)

Total Units Required (9 units)

High-Speed and Intercity Rail Management Certificate

The Certificate in High-Speed and Intercity Rail Management, offered by the Lucas Graduate School of Business and supported by the Mineta Transportation Institute, provides graduate study in transportation management, with specialized courses on managing high-speed and intercity rail systems, from planning and design to engineering and operations. The certificate is intended primarily for professionals working in the fields of public transportation or rail who wish to enhance their qualifications for advancement and promotion, or to provide opportunities for professionals from related fields to move into rail management. The program enables students to earn 9 graduate units of course credit that may later be applied to the Master of Science in Transportation Management (MSTM) program.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (12 units)

- MTM 245 - High-Speed and Intercity Rail: Planning & Design 3 *unit(s)*
- MTM 246 - High-Speed and Intercity Rail Operations/Engineering 3 *unit(s)*

Complete Two Courses From:

- MTM 201 - Transportation Systems and Society 3 *unit(s)* (GWAR)
- MTM 202 - Introduction to Transportation Funding and Finance 3 *unit(s)*
- MTM 203 - Transportation Marketing and Communications Management 3 *unit(s)*
- MTM 214 - Transportation Policy and Regulation 3 *unit(s)*
- MTM 215 - Transportation Planning and Project Development 3 *unit(s)*
- MTM 217 - Leadership and Management of Transportation Organizations 3 *unit(s)*

Total Units Required (12 units)

International Taxation Certificate

The advanced certificates in taxation, offered by the Lucas Graduate School of Business, provide an in-depth study of topics to help a tax practitioner advance in his/her career or develop a specialization. The coursework supplements prior graduate study in the tax area, in essence, serving as a post-Master's program.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

Complete three courses from below in consultation with MST program director.

- BUS 225C - International Tax - US Corporations with Foreign Activities 3 *unit(s)*

- BUS 225P - Advanced International Tax - US Corporations 3 *unit(s)*
- BUS 225U - Fundamentals of Transfer Pricing 3 *unit(s)*
- BUS 225X - International Taxation - US and Foreign Individuals 3 *unit(s)*
- BUS 227C - Tax Symposium 1 *unit(s)* (3 *units required*)

Total Units Required (9 units)

Tax Practice Certificate

The Certificate in Tax Practice, offered by the Lucas Graduate School of Business, provides nine units of graduate-level tax research and tax foundation skills and knowledge to students who already have either an undergraduate or graduate degree in accounting. This certificate can also assist anyone seeking nine units to help meet the required 150 units to become a CPA. It can help with career advancement and passing the CPA examination. The nine units can be applied to the MST program (if within the required time limits for degree completion).

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

- BUS 223A - Tax Research and Decision Making 3 *unit(s)* (GWAR)

Complete Six Units From:

- BUS 223B - Taxation of Partnerships 3 *unit(s)*
- BUS 223F - Tax Accounting Methods/Periods 3 *unit(s)*
- BUS 223G - Taxation of Business Entities 3 *unit(s)*
- BUS 225A - Taxation of Estates and Trusts 3 *unit(s)*
- BUS 225B - Taxation of Corporate Reorganizations 3 *unit(s)*
- BUS 225E - Data Analytics and Security 3 *unit(s)*
- BUS 225F - State Taxation Fundamentals 3 *unit(s)*
- BUS 225G - Taxation of S Corporations 3 *unit(s)*
- BUS 225H - Taxation of Property Transactions 3 *unit(s)*
- BUS 225I - Tax Practices, Penalties and Procedures 3 *unit(s)*
- BUS 225K - Advanced Individual Taxes 3 *unit(s)*
- BUS 225L - Accounting for Income Taxes 3 *unit(s)*
- BUS 225S - Consolidated Returns 3 *unit(s)*
- BUS 225V - Tax Considerations for High Tech Companies 3 *unit(s)*
- BUS 225W - Introduction to International Taxation 3 *unit(s)*
- BUS 227A - Individual Tax Compliance 1 *unit(s)* (3 *units required*)
- BUS 227B - Ethics for Tax Practitioners 1 *unit(s)* (3 *units required*)
- BUS 227C - Tax Symposium 1 *unit(s)* (3 *units required*)
- BUS 227D - Employment Taxation and the Modern Workforce 1 *unit(s)* (3 *units required*)
- BUS 227E - Foundation for Understanding Taxation 1 *unit(s)* (3 *units required*)
- BUS 227F - Personal and Business Leadership Skills for Tax Practitioners 1 *unit(s)*

Total Units Required (9 units)

Conditional on the approval of the program director, a student may select one other BUS elective course to substitute one of the elective courses listed above.

Transportation Management Certificate

The Certificate in Transportation Management, offered by the Lucas Graduate School of Business and supported by the Mineta Transportation Institute, provides an introduction to the graduate study of transportation management. It is intended primarily for professionals working in the field of transportation who wish to enhance their qualifications for advancement and promotion in their existing agency, or to provide opportunities to advance at other agencies. The program enables students to earn 9 units of course credit that may later be applied to the Master of Science in Transportation Management (MSTM) program.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (12 units)

Complete 12 units (or four courses) from:

- MTM 201 - Transportation Systems and Society 3 *unit(s)* (GWAR)
- MTM 202 - Introduction to Transportation Funding and Finance 3 *unit(s)*
- MTM 203 - Transportation Marketing and Communications Management 3 *unit(s)*
- MTM 214 - Transportation Policy and Regulation 3 *unit(s)*
- MTM 215 - Transportation Planning and Project Development 3 *unit(s)*
- MTM 217 - Leadership and Management of Transportation Organizations 3 *unit(s)*
- MTM 236 - Managing Technology Innovations in Transportation 3 *unit(s)*
- MTM 250 - Sustainable & Resilient Transportation Management 3 *unit(s)*

Total Units Required (12 units)

Transportation Safety, Security, and Emergency Management (TSSEM) Certificate

The Certificate in Transportation Safety, Security, and Emergency Management (TSSEM) offered by the Lucas Graduate School of Business and supported by the Mineta Transportation Institute, offers students a unique opportunity to develop expertise across the three interrelated topics of transportation safety, security, and emergency management. Safety management protects from harm caused by non-intentional hazards, security management protects from intentional human behaviors, and emergency management prepares organizations for effective organizational response in the face of emergencies.

While safety, security, and emergency management are each independently critical to protecting human life, property, and the environment, transportation professionals are much more successful at managing any one of the three when knowledgeable about all three topics.

Completing the certificate prepares students for careers across the transportation industry. Public-sector transportation organizations are required by law to have staff working on both safety and emergency management, and in recent years new federal mandates require public transit agencies to prioritize safety management. Students who complete the program would be well prepared for such positions as Chief Safety Officer of a public transit operator and emergency manager or security manager for a transit or transportation agency.

The program enables students to earn 9 units of course credit that may later be applied to the Master of Science in Transportation Management (MSTM) program. Additionally, students who complete the emergency management course (MTM 226A) earn certification in the California Standardized Emergency Management System (SEMS). Students who complete the security course (MTM 226B) also earn two certificates from the Department of Homeland Security/New Mexico Tech.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (12 units)

- MTM 201 - Transportation Systems and Society 3 *unit(s)* (GWAR)
- MTM 226A - Transportation Emergency Management 3 *unit(s)*
- MTM 226B - Transportation Security Management 3 *unit(s)*
- MTM 226C - Transportation Safety and Compliance Management 3 *unit(s)*

Total Units Required (12 units)

Spartan Accelerated Graduate Education (SAGE) Scholars

Spartan Accelerated Graduate Education (SAGE) Programs programs are combined bachelor's and master's programs at SJSU (per University Policy F19-1). Sometimes they may also satisfy the requirements for a credential. Students in these programs pursue a bachelor's and master's degree simultaneously. These program allow students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

Business Administration, Accounting Concentration, BS + Accounting and Analytics, MS

The Spartan Accelerated Graduate Education (SAGE) Accounting and Analytics Program enables qualified students in the BSBA Accounting program to complete requirements for *both* the baccalaureate and master's degrees at the same time. Students progress from undergraduate to graduate status seamlessly, with a simplified application process and *no application fee*. Students complete both degrees in less time than if completing them separately, providing significant cost savings. Students completing the Accounting and Analytics SAGE program are prepared for careers as practicing CPAs in public accounting or in industry.

Total SAGE Program Units (BS + MS) 141

Admission Requirements

All SJSU BSBA Accounting undergraduates are eligible to apply for the Accounting and Analytics SAGE program if they fulfill the following requirements:

- Have completed a minimum of 90 units towards the BSBA degree
- Have a cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units
- Have completed all lower division GE requirements
- Will have completed BUS1 120A, BUS1 121A, and BUS1 121B with an average GPA of 3.0 by June 1 of junior year.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Maintain a GPA of 3.0 or higher with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if grades are not improved.
- A GPA of 3.0 is required to earn the SAGE Accounting and Analytics degree.

Program Requirements (141 units)

Business Administration, Accounting Concentration, BS (111 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (38 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ENGL 100WB, COMM 100W, or LLD 100WB with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, B1, B2, B3, C1, C2, C1/C2, D/2 American Institutions (US123), E, and F 33 *unit(s)*

- SJSU Studies R 3 *unit(s)*
- Physical Education 2 *unit(s)*

Major Preparation (15 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (*Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.*)
- ENGL 100WB - Written Communication: Business 3 *unit(s)* OR COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* OR LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (*all WID*)

Major Requirements (55 units)

Lower Division Courses (10 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)*
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)*
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (15 units)

Additionally, to qualify for a baccalaureate degree in business administration with an Accounting concentration, all courses in the Accounting foundation classes must be completed with a grade of "C" or better. A cumulative 2.0 GPA is required in all business classes.

Accounting Foundation Courses (15 units)

- BUS1 120A - Accounting Information Systems 3 *unit(s)*
- BUS1 121A - Intermediate Accounting I 3 *unit(s)*
- BUS1 121B - Intermediate Accounting II 3 *unit(s)*
- BUS1 122A - Management Accounting and Control Systems 3 *unit(s)*
- BUS1 123A - Taxation of Businesses and Investments 3 *unit(s)*

University Electives (3 units)

Accounting and Analytics, MS (30 units)

Required Courses (15 units)

- BUS 220J - Business Communications & Ethics 3 *unit(s)*
- BUS 220R - Data Analytics for Accounting 3 *unit(s)*
- BUS 220S - Financial Reporting and Analysis III 3 *unit(s)*
- BUS 220U - Information Technology Audit 3 *unit(s)*
- BUS 220Z - Advanced Data Science and Analytics for Accounting 3 *unit(s)*

Electives (12 units)

12 units of elective courses selected in consultation with the graduate advisor.

Culminating Experience (3 units)

Plan B (Project)

- BUS 220A - Financial Statement Analysis 3 *unit(s)*

Total Units Required (141 units)

The standalone Business Administration, Accounting Concentration, BS program requires the completion of 9 units of required electives. Students satisfy these courses in this SAGE Scholars Program by completing BUS 220R, BUS 220S, and BUS 220U. These 9 units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Business Administration, Finance Concentration, BS + Finance, MS

Pending final approval from the CSU Chancellor's Office

The Finance Spartan Accelerated Graduate Education (SAGE) Program enables qualified students in the BSBA Finance program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in less time as compared to completing them separately. This will provide cost savings to the student.

Total SAGE Program Units (BS + MS) 144

Admission Requirements

All finance undergraduates are eligible to apply for, and be admitted to, the SAGE Finance program in Spring semester of their junior year if they fulfill the following requirements by June 1 of that year:

- Completed a minimum of 90 units towards the BS degree;
- Completed BUS1 170 (Fundamentals of Finance) and BUS2 90 (Business Statistics) with grades of B or better;
- Have a cumulative GPA of 3.2 or better, or GPA of 3.2 or better in the last 60 semester units;

- Completed all lower division GE requirements.

In cases where demand from qualified applicants exceeds available placements in the program, admission decisions will be determined by evaluating student GPAs, performance in prerequisite courses, and conducting interviews.

Those who qualify for the SAGE program but are not admitted are eligible for regular MSF admission.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Maintain a GPA of 3.0 or higher with no individual course grade below a C.
- Students not maintaining these standards will be placed on probation initially, followed by disqualification if grades are not improved.
- A GPA of 3.0 is required to earn the SAGE Finance degree.

Program Requirements (144 units)

Business Administration, Finance Concentration, BS (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (38 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ENGL 100WB, COMM 100W, or LLD 100WB with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, B1, B2, B3, C1, C2, C1/C2, D/2 American Institutions (US123), E, and F 33 *unit(s)*
- SJSU Studies R 3 *unit(s)*
- Physical Education 2 *unit(s)*

Major Preparation (15 units)

All of the following courses must be completed with a grade of "C" or better prior to taking any upper division major coursework.

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (or equivalent)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4) (Students who complete any of the following with a C or better may substitute it for MATH 70: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.)
- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* OR ENGL 100WB - Written Communication: Business 3 *unit(s)* OR LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (all WID)

Major Requirements (61 units)

The following Major Requirement courses must be completed with a grade of "C or better": BUS1 20, BUS1 21, BUS2 90, BUS1 170. All courses in the Concentration Requirements for Finance must be completed with a grade of "C or better".

Lower Division Courses (13 units)

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 21 - Managerial Accounting 3 *unit(s)*
- BUS3 80 - Legal Environment of Business 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)*
- BUS4 91L - Computer Tools for Business 1 *unit(s)*

Upper Division Business Fundamentals Courses (15 units)

- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- BUS3 186 / PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- One non-business global perspectives course in Area V 3 *unit(s)*

Required Concentration Courses (15 units)

- BUS1 171A - Financial Institutions and Markets 3 *unit(s)*
- BUS1 172A - Investment Analysis 3 *unit(s)*
- BUS1 173A - Financial Management: Theory and Policy 3 *unit(s)*
- BUS 220A - Financial Statement Analysis 3 *unit(s)*
- BUS 273 - Business Valuation 3 *unit(s)*

Concentration Elective (3 units)

Complete one course from:

- BUS1 127A - Honors Practicum in Corporate Financial Management 3 *unit(s)*
- BUS1 127B - Advanced Honors Practicum 3 *unit(s)*
- BUS1 171B - Commercial Banking 3 *unit(s)*
- BUS1 172B - Portfolio Management 3 *unit(s)*
- BUS1 172C - Futures and Options 3 *unit(s)*
- BUS1 172D - Student Managed Investment Fund 3 *unit(s)*
- BUS1 173B - Problems in Financial Management 3 *unit(s)*
- BUS1 173C - Entrepreneurial Finance 3 *unit(s)*
- BUS1 175 - Real Estate Finance 3 *unit(s)*
- BUS1 176 - Business Valuation 3 *unit(s)*
- BUS1 177 - International Business Finance 3 *unit(s)*
- BUS1 179B - Selected Topics in Business Finance 3 *unit(s)*

University Electives (6 units)

Finance, MS (24 units)

Core Courses (12 units)

- BUS 200F - Leadership Communication for Finance Professionals 2 *unit(s)*
- BUS 220 - Financial Accounting 3 *unit(s)*
- BUS 265F - Silicon Valley Experience for Finance Professionals 1 *unit(s)*
- BUS 270A - Financial Planning and Analysis 3 *unit(s)*
- BUS 270C - Financial Modeling and Data Visualization 3 *unit(s)*

Elective Courses (9 units)

Complete 3 courses. Students may include up to two BUS elective courses in the MBA or MSA programs subject to approval by program directors. Students in the standalone MSF degree complete BUS 270. Students in the SAGE program may complete BUS 270 or another elective course.

- BUS 222 - Profit Planning and Control 3 *unit(s)*
- BUS 270 - Financial Management 3 *unit(s)*
- BUS 270B - Financial Derivatives for Corporate Finance 3 *unit(s)*

Culminating Experience (3 units)

- BUS 270D - Case Studies in Corporate Finance 3 *unit(s)* (GWAR)

Total Units Required (144 units)

The standalone Business Administration, Finance Concentration, BS program requires the completion of 9 units of required electives. Students satisfy 6 of these elective units in this SAGE Scholars Program by completing BUS 220A and BUS 273. BUS 220A is a required course in the Finance, MS program while BUS 273 is an elective option. These 6 units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Students in the standalone MSF degree complete BUS 270. Students in the SAGE program may complete BUS 270 or another elective course.

SJSU Online

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. These upper division degree completion programs are offered through a special session that requires a separate application process. If interested, please contact one of our Enrollment Counselors for more information.

Business Administration, General Business Concentration, BS (SJSU Online)

The General Business concentration, offered by the Department of Marketing and Business Analytics, offers students a broad spectrum of courses to prepare them for careers in small, medium-sized or family businesses and for jobs with companies that train new employees in a specific job largely unrelated to a functional area such as managing a large retail store or servicing technology company's customers.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes are delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
SJSU Studies Area R	3
Major Requirements	51
University Electives	6
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units). The following courses must be passed with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
 - (F) Ethnic Studies
- Completion of at least 22 units of the following courses (or equivalents). The following Preparation for the Major and Required for the Major courses must be completed with a grade of "C or better": ENGL 2, MATH 70, BUS1 20, BUS2 90.
 - ECON 1A - Principles of Economics: Macroeconomics 3 unit(s)
 - ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D)
 - MATH 70 - Mathematics for Business OR MATH 71 - Calculus for Business and Aviation OR MATH 30 - Calculus I 3 unit(s) (All B4)
 - BUS1 20 - Financial Accounting 3 unit(s)
 - BUS1 21 - Managerial Accounting 3 unit(s)
 - BUS3 80 - Legal Environment of Business 3 unit(s)
 - BUS2 90 - Business Statistics 3 unit(s)
 - BUS4 91L - Computer Tools for Business 1 unit(s)

University Requirements (3 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

- SJSU Studies Area R

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (51 units)

Written Communication (3 units)

- ENGL 100WB - Written Communication: Business 3 *unit(s)* (WID)
- COMM 100W - Writing Workshop: Writing for Influence 3 *unit(s)* (WID)
- LLD 100WB - Writing Workshop for Business Students 3 *unit(s)* (WID)

Upper Division Business Fundamentals Courses (15 units)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 140 - Fundamentals of Operations Management 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*

Upper Division Business Integration and Perspectives Courses (15 units)

- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- BUS4 188 - Business Systems and Policy 3 *unit(s)*
- BUS3 189 - Strategic Management 3 *unit(s)*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)*
- One non-business global perspectives course in Area V 3 *unit(s)*

Concentration Requirements (18 units)

Up to 12 units of coursework can be from any one department. The following courses must be completed with grades of "C-" or better.

Required Courses (12 units)

Select at least one course from the Department of Marketing and Business Analytics, and at least one course from either the School of Management or the School of Global Innovation and Leadership. Up to 6 units can be advisor approved transfer credit.

Additional Courses (6 units)

Any upper division business courses. Please see an advisor for a current list of acceptable courses.

University Electives (6 units)

Total Units Required (120 units)

Connie L. Lurie College of Education

Office: Sweeney Hall

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Website: www.sjsu.edu/education

Leadership:

Heather Lattimer, Dean

Mark Felton, Associate Dean of Research

Overview

The Connie L. Lurie College of Education is a professional community of students, faculty and staff engaged in supportive partnerships to serve a community of culturally diverse children, youth and families by pursuing and promoting scholarly and reflective inquiry, and access to a quality lifelong education. Faculty, staff and graduates are compassionate and ethical professionals who are mindful of our responsibilities in a democratic society. The College's core values are excellence and equity. Excellence is manifested in the rigor of our academic programs, in our teacher/scholar faculty contributions, and in the high level of staff service. We challenge our students to strive for excellence in their academic and personal pursuits, as informed and active citizens in their own communities. To achieve equity, our students, faculty, and staff continuously work for social justice and educational opportunities for all members of our society.

The college offers Bachelor's and Master's degrees, a doctoral program, and numerous professional credentials. Programs are offered through six academic departments.

- Child and Adolescent Development
- Communicative Disorders and Sciences
- Counselor Education
- Educational Leadership
- Special Education
- Teacher Education

The college, housed in William Sweeney Hall, offers a variety of resources including the Student Success Center, the Kay A. Armstead Center for Communication Disorders and the Child Development Laboratory Preschool, as well as two computer laboratories that are open to both undergraduate and graduate students. Students also have access to other high tech education applications.

Student Service Centers

The Kay A. Armstead Center for Communication Disorders provides speech-language-hearing evaluations and therapy services to students, staff, faculty, and the local San Jose community.

The Child Development Laboratory Preschool includes the Toddler and Multi-Age Labs on the SJSU campus. These programs provide undergraduates with both observation and hands-on clinical/practicum opportunities and engagement.

The Credential Services Office recommends candidates for their credentials upon program completion. Additionally, the office provides resources and services to aid in meeting various requirements, including basic skills, subject matter competency, and other prerequisites for program admission and completion. Information regarding elementary (Multiple Subject), secondary (Single Subject), and special education (Education Specialist) teaching credentials, alongside other service credentials and certificate programs, is readily accessible.

The Lurie College Student Success Center provides in-person and virtual academic advising for undergraduate students majoring or intending to major in any of the departments in the College of Education. The Student Success Center team provides academic planning, including General Education (GE), university policies and procedures, change of major/minor, academic notice, disqualification, and reinstatement. We promote lifelong learning and provide students with resources to make informed decisions about their academic and career goals. We are committed to creating a clear path to graduation and student success.

Advising

Advising and information related to applications are handled through the six academic departments.

These departments include Child and Adolescent Development, Communicative Disorders and Sciences, Counselor Education, Educational Leadership, Special Education, and Teacher Education.

Undergraduate Major(s)

Child and Adolescent Development, BA

This ChAD program, offered by the Department of Child and Adolescent Development, provides a strong foundation in child and adolescent development and could be the basis for graduate study in child and adolescent development and related fields. This major is designed for students interested in pursuing a career in a variety of child-related fields, such as early childhood and elementary school classrooms, community settings, and/or agencies serving children, youth, and families. Students who have declared Child and Adolescent Development (ChAD) as their major should meet with the department advisor for consultation and approval of program roadmaps. Information about ChAD advising and how to make an appointment can be found on the department website.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Requirements	51
University Electives	25
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (51 units)

Lower Division Core (12 units)

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- CHAD 80 - Quantitative Analysis in Developmental Science 3 *unit(s)* (B4) (*preferred*) OR STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (May substitute UNVS 15/MATH 15 or SOCS 15/SOCI 15)

Upper Division Core (24 units)

- CHAD 101 - Research Methods in Developmental Science 3 *unit(s)*
- CHAD 165 - Risk and Resilience in a Community Context 3 *unit(s)*
- CHAD 168 - Social and Emotional Development 3 *unit(s)*
- CHAD 169 - Motivating Children and Adolescents in Educational Settings 3 *unit(s)*
- CHAD 170 - Cognitive Development in Context 3 *unit(s)*
- CHAD 195 - Senior Seminar in Child & Adolescent Development 3 *unit(s)*

Complete one course:

- CHAD 100W - Writing Workshop 3 *unit(s)* (WID) (*may substitute LLD 100W*)

Complete one course:

- CHAD 162 - Cultural Influences in Childhood and Adolescence 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*

Area of Specialization (15 units)

Specializations are a cluster of courses used by departments for advising purposes. Specializations will not appear on transcripts or diplomas. Please see an advisor for more details. Complete one of the following specializations:

Early Childhood Focus (15 units)

- CHAD 150 - Development of Language and Communicative Competence 3 *unit(s)*

- CHAD 152 - Foundations for Early Childhood Curriculum 3 *unit(s)*
- CHAD 160 - Practicum in Early Childhood Education 3 *unit(s)*
- CHAD 161 - Administration of Early Childhood Programs 3 *unit(s)*
- CHAD 173 - Critical Issues in Infant/Toddler Development 3 *unit(s)*

Community Focus (15 units)

- CHAD 104 - Program Evaluation and Assessment in Community-Based Programs 3 *unit(s)*
- CHAD 156 - Social Media and Youth Civic Engagement 3 *unit(s)*
- CHAD 157 - Program Management in Community Organizations 3 *unit(s)*
- CHAD 158 - Practicum in Community Organizations 3 *unit(s)*

Critical Issues in Child and Adolescent Development (3 units)

Complete one course:

- CHAD 163 - Critical Issues in Adolescent Development 3 *unit(s)*
- CHAD 173 - Critical Issues in Infant/Toddler Development 3 *unit(s)*

University Electives or Minor (28 units)

A minor is strongly suggested.

Total Units Required (120 units)

CHAD 158, CHAD 160 and CHAD 195 may only be repeated once.

Child and Adolescent Development, Preparation for Teaching W/CSET Waiver, BA

This major is designed for students interested in teaching in elementary school or middle school. The following coursework satisfies San José State University's requirements for a BA in Child and Adolescent Development (ChAD) with Preparation for Teaching. This specific pathway has been approved by the California Commission on Teacher Credentialing (CCTC) to serve as a waiver of the CSET for Multiple Subjects requirement for post-baccalaureate teacher credential programs. Note that this pathway includes several lower-division course requirements. Students are encouraged to see a department advisor to identify appropriate coursework. Information about ChAD advising and instructions to make an appointment can be found on the department website.

The Commission on Teacher Credentialing in the state of California (CCTC) recognizes Teacher Preparation degrees as verification of subject matter competence. The following coursework, offered by the Department of Child and Adolescent Development, satisfies San José State University's requirements for a BA in Child and Adolescent Development, and is a program approved by the CCTC for waiver of the subject matter examination (CSET for Multiple Subjects) required to earn a teaching credential. The department also offers a Child and Adolescent Development, Preparation for Teaching, BA without a CSET waiver.

Maintaining a minimum grade point average (GPA) of at least 2.87 and completion of the program will not guarantee admission to the credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See the Teacher Preparation section of the catalog for information on application and admission to credential programs.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	20
Major Requirements	39
Multiple Subjects Preparation Core	60-61
University Electives	0-1
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (12 units)

Of the 39 units required by the university, 27 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Of the 39 units, the following 12 units are not satisfied in the major:

- GE Area A1 3 *unit(s)*
- GE Area C2 3 *unit(s)*
- GE Area C1 or C2 3 *unit(s)*
- GE Area F 3 *unit(s)*

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (39 units)

Lower Division Core (12 units)

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- CHAD 80 - Quantitative Analysis in Developmental Science (*preferred*) **OR** STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (*May substitute with UNVS 15/MATH 15 or SOCS 15/SOCI 15*)(B4)

Upper Division Core (27 units)

- CHAD 101 - Research Methods in Developmental Science 3 *unit(s)*
- CHAD 159 - Practicum in K-8 Education 3 *unit(s)*
- CHAD 168 - Social and Emotional Development 3 *unit(s)*
- CHAD 169 - Motivating Children and Adolescents in Educational Settings 3 *unit(s)*
- CHAD 170 - Cognitive Development in Context 3 *unit(s)*
- CHAD 195 - Senior Seminar in Child & Adolescent Development 3 *unit(s)*

Complete one course:

- CHAD 100W - Writing Workshop 3 *unit(s)* (WID) (*may substitute LLD 100W*)

Complete one course:

- CHAD 162 - Cultural Influences in Childhood and Adolescence 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*

Complete one course:

- CHAD 163 - Critical Issues in Adolescent Development 3 *unit(s)*
- CHAD 173 - Critical Issues in Infant/Toddler Development 3 *unit(s)*

Multiple Subjects Preparation Core Curriculum (60-61 units)

Language and Literature (15-16 units)

- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (*ENGL 1B also accepted for Transfer Students.*)
- ENGL 112A - Children's Literature 3 *unit(s)*
- CHAD 135 - Development of Language & Literacy in Children 3 *unit(s)*

Complete one course:

- ENGL 103 - Modern English 4 *unit(s)*
- LING 107 - Patterns of English 3 *unit(s)*

Mathematics (9 units)

- MATH 12 - Number Systems 3 *unit(s)* (B4)
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 106 - Intuitive Geometry 3 *unit(s)*

Science (15 units)

- BIOL 21 - Human Biology 3 *unit(s)* (B2+B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- ENVS 158 - Environmental Education 3 *unit(s)*
- GEOL 103 - Earth Systems and the Environment 3 *unit(s)* (R)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1)

Visual and Performing Arts (9 units)

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*
- MUSC 10B - Introduction to Music 3 *unit(s)* (C1)

Art Disciplines (3 units)

Complete one course:

- ART 39 - Multicultural Arts for Children 3 *unit(s)*
- ART 138 - Elementary Art Methods 3 *unit(s)*
- CA 70 - Visual & Media Arts for K-8 Teachers 3 *unit(s)*
- CA 75 - Performing Arts for K-8 Teachers 3 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*
- TA 167 - Theatre in Education 3 *unit(s)*

Physical Education and Health (3 units)

- CHAD 149 - Child Health and Activity 3 *unit(s)*

History (9 units)

- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)* (S)
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)

University Electives (0-1 units)

Highly recommend world language and technology coursework for teaching credential (see Credential Information Services).

Total Units Required (120 units)

Students in the Child and Adolescent Development, Preparation for Teaching, BA have more flexibility in the selection of their General Education courses.

CHAD 159 and CHAD 195 may be repeated only once.

Child and Adolescent Development, Preparation for Teaching, BA

This major is designed for students interested in teaching in elementary school or middle school. The following course work, offered by the Department of Child and Adolescent Development, satisfies San José State University's requirements for a BA in Child and Adolescent Development (ChAD) with Preparation for Teaching. Students who are transfers or who are changing into this major, in consultation with a department advisor, identify the course work appropriate for the individual. Information about ChAD advising and making an appointment can be found on the department website.

The Commission on Teacher Credentialing in the state of California (CCTC) recognizes Teacher Prep degrees as verification of subject matter competence. The following coursework satisfies San José State University's requirements for a BA in ChAD, Preparation for Teaching. The department also has a program approved by the CCTC for waiver of the subject matter examination (CSET for Multiple Subjects) required to earn a teaching credential. There are different requirements for this waiver option. If interested, see the Child and Adolescent Development, Preparation for Teaching W/CSET Waiver, BA program.

Maintaining a minimum grade point average (GPA) of at least 2.87 and completion of the program will not guarantee admission to the credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See the Teacher Preparation section of the catalog for information on application and admission to credential programs.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Requirements	39
Multiple Subjects Preparation Core	33-34
University Electives	6-7
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (39 units)

Lower Division Core (12 units)

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- CHAD 80 - Quantitative Analysis in Development Science (*preferred*) **OR** STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (*May substitute STAT 95 with UNVS 15/MATH 15 or SOCS 15/SOCI 15*) (B4)

Upper Division Core (27 units)

- CHAD 101 - Research Methods in Developmental Science 3 *unit(s)*
- CHAD 159 - Practicum in K-8 Education 3 *unit(s)*
- CHAD 168 - Social and Emotional Development 3 *unit(s)*
- CHAD 169 - Motivating Children and Adolescents in Educational Settings 3 *unit(s)*
- CHAD 170 - Cognitive Development in Context 3 *unit(s)*
- CHAD 195 - Senior Seminar in Child & Adolescent Development 3 *unit(s)*

Complete one course:

- CHAD 100W - Writing Workshop 3 *unit(s)* (WID) (*may substitute LLD 100W*)

Complete one course:

- CHAD 162 - Cultural Influences in Childhood and Adolescence 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*

Complete one course:

- CHAD 163 - Critical Issues in Adolescent Development 3 *unit(s)*
- CHAD 173 - Critical Issues in Infant/Toddler Development 3 *unit(s)*

Multiple Subjects Preparation Core Curriculum (33-34 units)

Language and Literature (15-16 units)

- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 112A - Children's Literature 3 *unit(s)*
- CHAD 135 - Development of Language & Literacy in Children 3 *unit(s)*

Complete one course:

- ENGL 103 - Modern English 4 *unit(s)*
- LING 107 - Patterns of English 3 *unit(s)*

Mathematics (9 units)

- MATH 12 - Number Systems 3 *unit(s)* (B4)
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 106 - Intuitive Geometry 3 *unit(s)*

Science (3 units)

- ENV5 158 - Environmental Education 3 *unit(s)*

Visual and Performing Arts (3 units)

Complete one course from:

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*
- ART 39 - Multicultural Arts for Children 3 *unit(s)*
- ART 138 - Elementary Art Methods 3 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*
- TA 167 - Theatre in Education 3 *unit(s)*

Physical Education and Health (3 units)

- CHAD 149 - Child Health and Activity 3 *unit(s)*

University Electives (6-7 units)

Highly recommend world language and technology coursework for teaching credential (see Credential Information Services).

Total Units Required (120 units)

Students interested in the Child and Adolescent Development, Preparation for Teaching W/CSET Waiver, BA are required to satisfy specific General Education courses.

CHAD 159 and CHAD 195 may be repeated only once.

Communicative Disorders and Sciences, BS

The BS in Communicative Disorders and Sciences degree, offered by the Department of Communicative Disorders and Sciences, is a pre-professional program intending to prepare students for graduate study in audiology or speech-language pathology.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15-18
Major Requirements	42
University Electives	22-25
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Communicative Disorders and Science courses are only offered once per year. That means that students begin CDS courses in Fall semesters only, as Spring semester courses cannot be taken without having completed the Fall semester prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (18 units)

Of the 39 units required by the university, 21 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Major Preparation (15-18 units)

Statistics Course

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

Biological Sciences Course

Complete one course from:

- BIOL 10 - The Living World 3 *unit(s)* (B2)
- BIOL 21 - Human Biology 3 *unit(s)* (B2+B3)
- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2B3)

Physics or Chemistry Course

Complete one course from:

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1) (*must also take B3*)

Social Sciences/Behavioral Sciences Course

Complete one course from:

- ANTH 11 - Cultural Anthropology 3 *unit(s)* (D)
- GERO 107 - Aging and Society 3 *unit(s)* (S)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- SOCI 57 - Community Involvement and Personal Growth 3 *unit(s)* (E)
- SOCI 80 - Social Problems 3 *unit(s)* (D)

Lifespan Development Course

Complete one course from:

- CHAD 60 - Child Development 3 *unit(s)* (E)
- PH 15 - Human Life Span 3 *unit(s)* (D)
- PSYC 102 - Psychology of Childhood 3 *unit(s)*

Major Requirements (42 units)

Core Courses (36 units)

- EDSP 102 - Communication Development in Children 3 *unit(s)*
- EDSP 110 - Survey of Communication Disorders 3 *unit(s)*
- EDSP 111 - Introduction to Clinical Phonetics 3 *unit(s)*
- EDSP 112 - Fundamentals of Clinical Practice 3 *unit(s)*
- EDSP 113 - Anatomy and Physiology of Communication Disorders 3 *unit(s)*
- EDSP 120 - Communicative Disorders in Children 3 *unit(s)*
- EDSP 161 - Neuroanatomy and Neurophysiology of Communication Disorders 3 *unit(s)*
- EDSP 162 - Communicative Disorders in Adults 3 *unit(s)*
- EDSP 176 - Guided Professional Clinical Observations 3 *unit(s)*
- EDAU 115 - Hearing Science 3 *unit(s)*
- EDAU 170 - Introduction to Audiology 3 *unit(s)*
- EDAU 172 - Principles of Aural Rehabilitation 3 *unit(s)*

Practicum (6 units)

Placement in clinical practicum is contingent upon completing a clinic application, clinic availability, major GPA verification of 3.0+ and an overall GPA of 2.7+. Students who do not complete an undergraduate clinic practicum will need to complete an approved clinic substitution and submit a course substitution form.

- EDSP 177 - Practicum in Speech Pathology 1-3 *unit(s)*
- EDAU 177 - Practicum in Audiology 1-3 *unit(s)*

University Electives (22-25 units)

See CDS Roadmap Assistance for suggested electives.

Total Units Required (120 units)

Interdisciplinary Studies, Educational and Community Leadership Concentration, BA (SJSU Online)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

The Interdisciplinary Studies BA Concentration in Educational and Community Leadership, offered by the Department of Educational Leadership, empowers students to take a role in promoting change for social justice in their communities. The program is designed to enhance students' opportunities for professional advancement in careers in the fields of education, child and youth services, community organizations, and social services with a curriculum that brings together a variety of academic disciplines that explore societal inequities and methods to accentuate strengths of a community and of its members.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Graduation Requirements	9
Major Core Requirements	21
Specialization Requirements	15
University Electives	15
Total	120

Program Roadmaps

The 2-Year and 3-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better. Applicants must also have completed the Core Lower Division General Education Requirements (39 units), including all four CSU-approved Basics Skills courses, each with a C- or better:

- (A1) Oral Communication/Speech
- (A2) Written English Composition
- (A3) Critical Thinking/Logic
- (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)

GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.

Applicants interested in selecting the Early Childhood Education Specialization must have or find access for field placement in a suitable early childhood setting.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GVAR may be found in the Undergraduate University Graduation Requirements (GVAR) section.

This requirement is fulfilled in this major with:

- CHAD 100W - Writing Workshop 3 *unit(s)* (*WID*)

Major Requirements (36 units)

Required Core (21 units)

- CHAD 100W - Writing Workshop 3 *unit(s)* (*WID*)
- CHAD 101 - Research Methods in Developmental Science 3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*

- EDLD 110 - Introduction to Educational and Community Leadership 3 *unit(s)*
- EDLD 120 - The Right to Learn: Language, Dignity, and Education 3 *unit(s)*
- EDLD 140 - Identity, Solidarity, and Social Justice Leadership 3 *unit(s)*
- EDSP 150 - Communication, Leadership, and Social Justice 3 *unit(s)*

Specialization (15 units)

Complete one of the following specialization:

Early Childhood Education

Must have or find access for field placement in a suitable early childhood setting to complete this specialization.

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 152 - Foundations for Early Childhood Curriculum 3 *unit(s)*
- CHAD 160 - Practicum in Early Childhood Education 3 *unit(s)*
- CHAD 161 - Administration of Early Childhood Programs 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*

Inclusive Education

- EDEL 102 - Psychological Foundations of Education 3 *unit(s)*
- EDEL 108E - Teaching Reading in Linguistically and Culturally Diverse Classrooms 3 *unit(s)*
- EDSP 110 - Survey of Communication Disorders 3 *unit(s)*
- EDSE 224 - Methods for Emergent Bilinguals with Disabilities 1-3 *unit(s)* (3 *units required*)
- EDSE 228A - Topics in Collaboration and Transition 3 *unit(s)*

University Electives (15 units)

May include lower or upper division, at least 9 units must be upper division.

Total Units Required (120 units)

Undergraduate Minor(s)

Atypical Child Studies Minor

The courses for the Minor in Atypical Child Studies, offered by the Department of Child and Adolescent Development, provides a solid foundation in both normative and atypical early childhood development. The minor is particularly beneficial for students who plan to pursue careers in a number of branches of the social and life sciences, education, medicine, and other human services professions focusing on atypical infants/children and their families.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the

coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Core Courses (9 units)

- CHAD 60 - Child Development 3 *unit(s)* (E)
- EDSE 104 - Early Intervention for Children with Disabilities 3 *unit(s)*
- EDSE 108 - Assessing Young Children 3 *unit(s)*

Elective Courses (6 units)

Complete two courses from:

- CHAD 161 - Administration of Early Childhood Programs 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*
- CHAD 168 - Social and Emotional Development 3 *unit(s)*
- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S)

Total Units Required (15 units)

Child and Adolescent Development Minor

The courses for the Minor in Child & Adolescent Development offer a range of opportunities to examine the course of human development with specific pathways for students interested in early childhood education, elementary school teaching, and community organizations serving children, youth, and families. The minor, offered by the Department of Child and Adolescent Development, is particularly appropriate for students planning to enter the fields of education, social welfare, nursing, child care, and other human services professions.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Complete one course from:

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)

Minor Electives (12 units)

These focus areas are suggestions only. Students may select any courses from the list below. Specializations will not appear on transcripts or diplomas. Please see your advisor for more details. Complete four courses from any of the following focus areas:

Child & Adolescent Development (General)

- CHAD 162 - Cultural Influences in Childhood and Adolescence 3 *unit(s)*
- CHAD 163 - Critical Issues in Adolescent Development 3 *unit(s)*
- CHAD 168 - Social and Emotional Development 3 *unit(s)*
- CHAD 169 - Motivating Children and Adolescents in Educational Settings 3 *unit(s)*
- CHAD 170 - Cognitive Development in Context 3 *unit(s)*

Community Focus

- CHAD 104 - Program Evaluation and Assessment in Community-Based Programs 3 *unit(s)*
- CHAD 156 - Social Media and Youth Civic Engagement 3 *unit(s)*
- CHAD 157 - Program Management in Community Organizations 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*
- CHAD 165 - Risk and Resilience in a Community Context 3 *unit(s)*

Early Childhood Focus

- CHAD 150 - Development of Language and Communicative Competence 3 *unit(s)*
- CHAD 152 - Foundations for Early Childhood Curriculum 3 *unit(s)*
- CHAD 161 - Administration of Early Childhood Programs 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*
- CHAD 173 - Critical Issues in Infant/Toddler Development 3 *unit(s)*

Teacher Preparation Focus

- CHAD 131 - Equity, Resilience, and Risk in Public Schools 3 *unit(s)*
- CHAD 135 - Development of Language & Literacy in Children 3 *unit(s)*
- CHAD 149 - Child Health and Activity 3 *unit(s)*
- CHAD 150 - Development of Language and Communicative Competence 3 *unit(s)*

Total Units Required (15 units)

Deaf Education Minor

The Minor in Deaf Education offered by the Department of Special Education provides students with a basic understanding of American Sign Language and introduces them to American Deaf Culture. Students acquire an understanding of typical and atypical language development and explore the cultural perspectives of the deaf community.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12 units)

- EDSE 14A - American Sign Language I 3 *unit(s)*
- EDSE 14B - American Sign Language II 3 *unit(s)*
- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S)
- EDSE 115 - Introduction to Deaf Culture 3 *unit(s)*

Total Units Required (12 units)

Special Education Minor

The Minor in Special Education offered by the Department of Special Education provides students with a foundation in teaching diverse learners. Students gain an understanding of typical and atypical development, particularly as it relates to language and social development, and strategies to support all learners in classroom and community settings.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Courses completed with a B or higher may be applied to an Education Specialist Credential upon completion of the undergraduate degree.

Minor Requirements (12 units)

Required Courses

- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S)
- EDSE 110 - Students with Autism Spectrum Disorders 3 *unit(s)*
- EDSE 124 - Teach for Social Justice: Language & Disability 3 *unit(s)* (V)

Complete One Course From:

- EDSE 104 - Early Intervention for Children with Disabilities 3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*

Total Units Required (12 units)

Master(s)

Child and Adolescent Development, MA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Arts degree in the Department of Child and Adolescent Development (ChAD) prepares students for advanced study leading to professional careers in settings that serve children, youth, and families.

Detailed information about the program can be found on the department website: www.sjsu.edu/chad/programs/ma-chad.

Admissions Requirements

Candidates apply separately to the university to obtain approval for university-level admission and to the department to obtain admission to the ChAD master's program. Candidates must meet all the university admission requirements. Note that applicants must have an undergraduate grade point average of 3.0 (B) or better in the last 60 semester units of undergraduate work.

In addition to meeting university requirements, the minimum requirement for admission to the ChAD MA program is 1) a baccalaureate degree awarded by an accredited institution, 2) a completed department application, 3) three letters of recommendation, 4) a 1-2-page typed statement of educational and professional background and professional goals, and 5) an essay on various topic areas in child and adolescent development. Preference is given to candidates with a background in ChAD or a related field (e.g., Psychology, Sociology, Education, Social Work, Nursing). Applicants can be admitted either in a conditional or classified status.

Applicants from countries in which the official language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE.

Requirements for Advancement to Graduate Candidacy

Students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MA degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

During the semester that the first 9 units of coursework will be completed, the ChAD MA candidate will need to submit a Departmental Request for Candidacy form [pdf]. This form must be signed by the ChAD graduate program coordinator and submitted to GAPE by the appropriate deadline. Check the deadline for submitting the Petition for Advancement to Graduate Candidacy. Any changes made in the program degree academic plan as listed on the candidacy form need to be requested using the Request for Course Substitution in Graduate Degree Program [pdf]. This form must be signed by the ChAD graduate program coordinator prior to submission to GAPE.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MA - Child and Adolescent Development Graduation Requirements

Students are expected to complete all required courses and select three electives from the department-approved list. In order to meet degree requirements, candidates for the MA in ChAD must maintain a 3.0 GPA in all courses with no single course grade below a B-. Students who earn less than a B- in any required course (CHAD 260A, CHAD 260B, CHAD 262, CHAD 266, CHAD 268, and CHAD 270) must retake the course and earn a grade of B- or better. For electives in which the earned grade was less than a B-, students have the option to retake the same course or to select a different elective.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing CHAD 260A.

Master's Requirements (30 units)

Core Courses (18 units)

- CHAD 260A - Seminar in Child and Adolescent Development: Research 3 *unit(s)* (GWAR)
- CHAD 260B - Seminar in Child and Adolescent Development 3 *unit(s)*
- CHAD 262 - Culture and Diversity in Child & Adolescent Development 3 *unit(s)*
- CHAD 266 - U.S. Social Policy Affecting Children and Families 3 *unit(s)*
- CHAD 268 - Seminar in Social and Emotional Development 3 *unit(s)*
- CHAD 270 - Seminar in Cognitive and Language Development 3 *unit(s)*

Interdisciplinary Electives (9 units)

Complete three department-approved elective courses from the department-approved list. Electives may be taken at any time during the MA program. In some circumstances, MA candidates may petition to take an elective not on the list. Candidates should submit a written statement to the Graduate Program Coordinator with the course request and justification.

Culminating Experience (3 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- CHAD 299 - Master's Thesis 3-6 *unit(s)*

Plan B (Project)

- CHAD 298 - Special Studies in Child and Adolescent Development 3-6 *unit(s)*

Total Units Required (30 units)

* Meets the Graduation Writing Assessment Requirement (GWAR). Must be taken in the first semester of enrollment.

** To be completed concurrently with CHAD 260B.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Counseling and Guidance, MA

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (48 units)
- Program Learning Outcomes

The Counseling and Guidance MA degree program prepares individuals to apply evidence-based counseling principles and practices to support individuals' academic, educational, vocational/career, and personal and social development. For candidates focused on K-12 school counseling, it also provides preparation in providing comprehensive school counseling services within elementary, middle, and secondary educational institutions. The program includes instruction in sociological and psychological counseling foundations, legal and professional mandates, and transformative and equity-minded social justice practices that lead to the development of justice-oriented multiculturally-skilled counselors. The program also provides students with opportunities to participate in short Faculty-Led Program (FLP) experiences abroad (ex: Costa Rica) to expand their global perspectives and cross-cultural experiences.

Additional information is available on the Department of Counselor Education website at www.sjsu.edu/counselored/.

Admissions Requirements

Applicants must submit all application materials, including the department's supplemental application materials (i.e., Autobiographical and Professional Goals Statement and resume) through the CSU's Cal State Apply system and meet the university's minimum admissions requirements to be considered for admissions to the MA program in Counseling and Guidance. See the Graduate Admissions website and this Catalog for general information about Graduate Admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE. For TOEFL Requirements, see the Policies and Procedures section, English Language Proficiency Requirement.

Requirements for Admission to Classified Standing

Applicants may be fully admitted if they meet the admissions requirements for the Graduate Division and the department's requirements. The minimum requirements for the program are a bachelor's degree from a regionally accredited college or university in any major/discipline with a preferred GPA of 3.0 or higher. Experience serving individuals from diverse backgrounds within K-12, postsecondary education, and/or community settings and a strong commitment to equity, diversity, and social justice is also highly preferred. Candidates who do not meet the 3.0 GPA requirement may still be considered if they demonstrate considerable experience in the education and/or counseling field working with individuals from diverse backgrounds.

- A. Candidates must meet all university admission requirements.
- B. Department application materials include the items listed below and should be uploaded directly on the Cal State Apply portal. For more information about the Counselor Education Department's application materials and process, visit the department's website.
 - 1. Autobiographical and Professional Goals Statement (three pages typed and double-spaced maximum) that includes the applicant's: a) educational background, b) experiences that demonstrate concern and capacity to work with individuals from diverse backgrounds in addition to any paid or volunteer work experience directly related to the education and/or counseling fields, c) professional goals related to pursuing the master's degree with or without a PPS K-12 School Counseling Credential (include areas of interest in counseling), d) specific interest in being a graduate student in SJSU's Counselor Education Department, and e) any additional information relevant to pursuing a master's degree with or without a PPS K-12 School Counseling Credential through SJSU's Counselor Education Department.
 - 2. Resume (three pages maximum) that includes degree(s) earned or in progress, employment, volunteer work, research experience, and honors/awards, if any.
 - 3. Three (3) recommendations from current or former professors who can attest to the applicant's ability to successfully pursue an advanced academic degree and/or from employers or supervisors who can address the applicant's experience within the proposed field of study. PPS School Counseling Credential-only applicants are only required to submit two recommendations. The Recommendation Form can be found on the department's website.
- C. Official transcripts from each college/university attended can be sent electronically to etranscript@sjsu.edu or official and sealed copies can be mailed to the SJSU Graduate Admissions office at:

Graduate Admissions and Program Evaluations
San José State University
One Washington Square, SH 404
San Jose CA 95192-0073

Admission to Conditionally Classified Standing

Applicants may be conditionally admitted (admitted with conditions) if they meet the admission requirements for the Graduate Division but do not fully meet departmental admissions requirements (e.g., GPA is below 3.0). The admission notification will explain the required terms and conditions for attaining Classified standing.

Requirements for Advancement to Candidacy

Candidacy denotes that a student is fully qualified to complete the final stages of the Master of Arts degree. General university requirements for advancement to candidacy are detailed in the Graduate Policies and Procedures section of this catalog. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Department Requirements

- 1. Complete foundational core courses [EDCO 215, EDCO 218, EDCO 232, and EDCO 244, (and EDCO 294 for PPS School Counseling Credential candidates)].
- 2. Complete a minimum of 9 units of advanced courses with a "C" or better. These courses can include practicum and fieldwork experience courses.
- 3. Complete the Graduate Writing Assessment Requirement (GWAR) by completing EDCO 215 with a "B" or higher.
- 4. Maintain an overall graduate GPA of 3.0 or higher.

5. Meet with your advisor to complete the Petition for Advancement to Graduate Candidacy form (typically completed while enrolled in EDCO 221).

Requirements for Graduation

University Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Completion of the degree also requires a minimum grade of "C" in all courses taken and a minimum overall GPA of 3.0.

Department Requirements

1. Successfully complete "Requirements for Advancement to Candidacy."
2. Complete 6 fieldwork units or 3 practicum and 3 fieldwork units.
3. Complete 12 units of advanced elective courses selected in consultation with the student's department advisor.
4. Complete 3 units (EDCO 221) to develop a project proposal (Plan B) or a thesis proposal (Plan A).
5. Apply for graduation via MySJSU.
6. Complete 6 units of advanced courses (EDCO 288 and EDCO 289).
7. Successfully complete either the project (Plan B, EDCO 298) or thesis (Plan A, EDCO 299).

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing EDCO 215 with a grade of B or higher.

Culminating Experience

Students choose a Plan A (Thesis) or Plan B (Project) option as their program culminating experience.

Plan A (Thesis)

Students selecting the Plan A option will write a master's thesis. The thesis will include original research on a topic approved by the thesis committee and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. Thesis proposals must be approved by the student's thesis committee, which is typically composed of two department faculty and a third faculty member from outside the department. Students enroll in EDCO 299 (3 units).

Plan B (Project)

Students selecting the Plan B option will complete a master's degree project or research paper. These students enroll in EDCO 298 (3 units).

Master's Requirements (48 units)

Foundational Core Courses (12 units)

To be completed in the order listed below:

- EDCO 215 - Introduction to Counseling and Guidance 3 *unit(s)* (GWAR)
- EDCO 218 - Counseling Process & Techniques 3 *unit(s)*
- EDCO 232 - Law & Ethics in Counseling 3 *unit(s)*
- EDCO 244 - Cultural Perspectives in Counseling 3 *unit(s)* OR EDCO 280 - Multicultural Counseling 3 *units*

Additional Foundational Courses (12 units)

To be completed in the order listed below:

- EDCO 266 - Education and Career Planning 3 *unit(s)*
- EDCO 282 - Assessment for Counselors 3 *unit(s)*
- EDCO 279 - Advanced Group Process Theory and Practice 3 *unit(s)*
- EDCO 285 - Trauma Counseling & Crisis Intervention 3 *unit(s)*

Research (3 units)

- EDCO 221 - Research in Counselor Education 3 *unit(s)*

Advanced Professional Development Courses - Required (9 units)

To be completed in the order listed below:

- EDCO 267 - Practicum in Lifespan and Career Development 1-3 *unit(s)*
- EDCO 288 - Seminar in Counseling Theory and Practice 3 *unit(s)* (GWAR)
- EDCO 289 - Seminar in Professional Counseling 3 *unit(s)*

Advanced Professional Development Courses - Electives (3 units)

Complete 1 course:

- EDCO 268 - Lifespan Development 3 *unit(s)* (If not already completed)
- EDCO 283 - Advanced Educational Assessment 3 *unit(s)*
- EDCO 289 - Seminar in Professional Counseling 3 *unit(s)* (a second section of EDCO 289 may be taken for credit if the content is different)

Practicum and Fieldwork (6 units)

- EDCO 292 - Supervised Experience in Counseling (3 *units* required)

Complete one of the following:

- EDCO 267 - Practicum in Lifespan and Career Development 1-3 *unit(s)*
- EDCO 292 - Supervised Experience in Counseling 3-6 *unit(s)*
- EDCO 280 - Multicultural Counseling 3 *unit(s)*
- EDCO 293 - Practicum in Child and Substance Abuse 3 *unit(s)*
- EDCO 294 - Practicum in Self-Development 3 *unit(s)*

Culminating Experience (3 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- EDCO 299 - Master's Thesis 3 *unit(s)*

Plan B (Project)

- EDCO 298 - Special Studies in Counselor Education 3 *unit(s)*

Total Units Required (48 units)

Elective courses must be planned in consultation with the student's department advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy in order to graduate.

Students pursuing the Master of Arts in Counseling and Guidance can choose to complete additional coursework and clinical counseling fieldwork experience to be eligible to pursue the Associate Professional Clinical Counselor (APCC) and Licensed Professional Clinical Counselor (LPCC) licensure through the California Board of Behavioral Sciences (BBS, see: <https://www.bbs.ca.gov/applicants/lpcc.html>). For more information about this option, students should refer to the LPCC Preparation website for specific requirements.

Educational Leadership, Concentration in Emancipatory School Leadership, MA

- Admission Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The MA Educational Leadership with a concentration in Emancipatory School Leadership, offered by the Department of Educational Leadership, prepares school leaders through deep engagement with research and practice through applied consulting on living case studies. Emancipatory school leadership approaches create organizational cultures to reflect the diversity of experience and knowledge within school communities through collaborative approaches to deconstruct power systems, challenge inequitable practices and policies, and cultivate community cultural wealth.

Admissions Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the Master of Arts degree in Emancipatory Leadership for Schools. See the GAPE Graduate Admissions website and admissions requirements section. Applicants must submit a letter of nomination/recommendation from a school leader as part of their application. Upon review of the applications, all applicant finalists will participate in an interview by the admissions committee to finalize admission to the program. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on GAPE's Graduate Program Test Requirements webpage. For TOEFL requirements, see the admissions requirements section.

Requirements for Admission to Classified Standing

Applicants may be admitted to classified standing if they meet the admissions requirements for both the Graduate Division and the department. The minimum requirements for the program are a bachelor's degree in any discipline, 3 years of experience working with K-12 schools, and a nomination/recommendation from a school leader. Preference is given to candidates who demonstrate a commitment to emancipatory practices in education.

- A. Candidates must meet all university admissions requirements.
- B. Department application materials include the items listed below and are to be sent directly to the department office at:

Department of Educational Leadership San José State University
One Washington Square, SH 491
San Jose, CA, 95192-0072

1. Autobiographical and Professional Goals Statement (two to three pages, double-spaced) that includes the applicant's:
 - a. educational background
 - b. experiences demonstrating work with schools
 - c. professional goals in pursuing the degree (include areas of interest in leadership)
 - d. any additional information explaining interest in the Emancipatory Leadership for Schools master's degree program
 2. One nomination/recommendation from a K-12 school leader.
 3. Two letters of recommendation from current or former professors and/or employers who can testify to the applicant's ability to successfully pursue an advanced academic degree and/or discuss the applicant's experience within the proposed field of study. Forms for these letters can be found on the Department of Educational Leadership website.
- C. Official sealed transcripts from each college/university attended should be sent to:

Graduate Admissions and Program Evaluations San José State University
One Washington Square, SH 219
San Jose, CA, 95192-0072

Graduation Requirements

Complete the following requirements:

1. PASC/CalAPA Transfer Units or Area of Specialization (12 units);
2. Core Courses: EDLD 201, EDLD 202, EDLD 204, EDLD 205, EDLD 206, and EDLD 253. Students must achieve a minimum of a "C" in each course, a cumulative GPA of 3.0 or better in all their coursework, AND a GPA of 3.0 or higher for the courses listed in the Candidacy form. At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The GWAR is satisfied with the degree requirements core course EDLD 201;
3. Both culminating experiences: Applied Consulting Project and the Emancipatory Leadership as Praxis Statement.

Master's Requirements (30 units)

PASC/CalAPA Transfer Units or Area of Specialization (12 units)

Students who have completed the PASC/CalAPA will be able to transfer 12 units of coursework and will take the remaining 18 units.

Students who have **not** completed the PASC/CalAPA will take graduate-level courses as a specialization in an area of interest that is related to educational leadership (e.g. Literacy - Instructional Leadership). These courses will be pre-approved by the department.

Year 1 (12 units)

Summer (6 units)

- EDLD 201 - Epistemologies of Educational Leadership: Personal, Political, & Intellectual 3 *unit(s)*
- EDLD 202 - Emancipatory Teaching and Learning 3 *unit(s)*

Fall (3 units)

- EDLD 205 - Equity & Access: Practices, Policies, & Pedagogies 3 *unit(s)*

Spring (3 units)

- EDLD 206 - Emancipatory Leadership as Praxis Seminar 3 *unit(s)*

Year 2 (6 units)

Summer (6 units)

- EDLD 204 - Critical Studies of Educational Policy 3 *unit(s)*
- EDLD 253 - Envisioning Emancipatory Leadership for Schools 3 *unit(s)* (3-Year Action Plan)

Culminating Experiences

The culminating experience contains an experience-based component requiring enrollment in both EDLD 205 and EDLD 206 in addition to submitting an approved praxis statement after completing EDLD 253.

1. Applied Consulting Project

Living Case Study on School Leadership

Upon identifying a school leadership challenge that a school or district is struggling with (living case study), students work as a cohort to research the problem, explore possible solutions, and work closely with the school or district to address the challenge with emancipatory leadership solutions.

2. Emancipatory Leadership as Praxis Statement

3-Year Action Plan

Students prepare an individualized 3-year leadership action plan that outlines their core values, a personal vision statement, current and lacking leadership skills and actionable goals to practice areas of growth.

Total Units Required (30 units)

Higher Education Leadership, MA

- Admissions Requirements
- Advancement to Candidacy
- Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The Higher Education Leadership, MA offered by the Department of Educational Leadership prepares higher education leaders through an equity-minded praxis approach to engage in transformative thinking and practice with the aim of disrupting how power, in the form of racism, classism, sexism, and related oppressions, have historically intersected to (re)produce and sustain disparate opportunities in higher education. Students are also required to participate in one day-long in person seminar per semester.

Admissions Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants must also respond to two short essay prompts. Upon review of the applications, all applicant finalists will participate in an interview by the admissions committee to finalize admission to the program. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Admissions Test Requirements webpage.

Requirements for Admission to Classified Standing

To be admitted to classified standing, applicants must have earned a Bachelor's degree from a regionally accredited institution with a minimum G.P.A. of 3.0 (based on a 4.0 scale). Two letters of recommendation are required, a third letter is optional.

Advancement to Candidacy

Students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MA degree are detailed in the Graduate Policies and Procedures section.

Graduation Requirements

Complete the following requirements:

1. Core courses: EDLD 210, EDLD 211, EDLD 212, EDLD 213, EDLD 214, EDLD 215, EDLD 216, EDLD 217A, EDLD 217B, EDLD 298. A student must maintain an overall grade point average (GPA) of 3.0 at all times, otherwise they will be placed on academic probation and required to raise the overall GPA above the 3.0 minimum during the subsequent semester (failing to do so will result in disqualification from the program).
2. The program requires an individual two-semester, six-unit case-study sequence, as well as a culminating capstone project. For the required culminating experience (EDLD 298), Higher Education Leadership MA students must complete a final master's capstone project. A project is a significant undertaking that

evidences originality and independent thinking, appropriate form and organization, and a rationale. Beginning Summer '24, the culminating capstone project will be a group assignment.

3. At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). This requirement is satisfied by the passing of EDLD 212.

Master's Requirements (30 units)

Year 1 (15 units)

Semester 1 (6 units)

- EDLD 210 - Socio-Cultural Foundations of U.S. Higher Education 3 *unit(s)*
- EDLD 211 - Higher Education Leadership 3 *unit(s)*

Semester 2 (9 units)

- EDLD 212 - Diversity, Equity, and Social Justice in Higher Education 3 *unit(s)* (GWAR)
- EDLD 213 - Policy and Ethics of Higher Education Governance and Finance 3 *unit(s)*
- EDLD 214 - Critical Data Analysis in Higher Education 3 *unit(s)*

Year 2 (15 units)

Semester 3 (9 units)

- EDLD 215 - Contemporary Issues in Higher Education 3 *unit(s)*
- EDLD 216 - Law, Policy, and Ethics in Higher Education 3 *unit(s)*
- EDLD 217A - Equity-Minded Leadership in Higher Education: Practices, Policies, and Pedagogies 3 *unit(s)*

Semester 4 (6 units)

- EDLD 217B - Equity-Minded Leadership in Higher Education as Praxis 3 *unit(s)*
- EDLD 298 - Higher Education Leadership Master's Capstone/Culminating Experience Course 3 *unit(s)*

Culminating Experience

Prerequisite to the culminating capstone project, students enroll in two semesters of coursework (EDLD 217A & EDLD 217B - 6 units) in which they conduct living case study projects. In EDLD 298, students have the option of completing a culminating project within one of two strands: researcher-focused (producing a research project on a topic in higher education) or practitioner-focused (producing a practitioner project on a problem of practice in higher education). Final capstone topics must be approved by the Higher Education Leadership Master's Coordinator and/or EDLD 298 instructor of record.

Multilingual and Multicultural Literacy Education, MA

- Admissions Requirements
- Advancement to Candidacy

- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Multilingual and Multicultural Literacy Education (MMLE) master's degree program, offered by the Department of Teacher Education, prepares educators to center the experiences of marginalized youth at the heart of literacy teaching and learning. With a focus on teaching PK-12 multilingual youth and students who have not been traditionally well served by public schools, this 30-unit program meets the requirements of California's Reading and Literacy Leadership Credential. The culminating project is an online portfolio showcasing each student's work. The MMLE program is fully online.

Admissions Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply and meet all the university admissions requirements.

- Applicants must have earned a Bachelor's degree from a regionally accredited institution.
- Two letters of recommendation are required.
- Applicants must hold a current preliminary teaching credential and have the ability to work in a PK-12 classroom.
- Applicants from countries in which the native language is not English must submit TOEFL scores. Minimum TOEFL scores acceptable for admission are 600 (Paper-based), 250 (Computer-based), or 100 (Internet-based).

Advancement to Candidacy

Students must maintain an overall grade point average (GPA) of 3.0 at all times; otherwise they will be placed on academic probation and required to raise the overall GPA above the 3.0 minimum during the subsequent semester. Failing to do so will result in disqualification from the program.

Requirements for Graduation

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Completion of the degree also requires a minimum grade of "C" in all courses taken and a minimum overall GPA of 3.0.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The GWAR is satisfied in this degree with EDTE 290C.

Culminating Experience

Plan B - Portfolio

The culminating project for the MMLE program is an online portfolio that evidences candidates mastery of the PLOs and California Commission on Teacher Credentialing program standards. The portfolio is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized in a website that includes the portfolio's significance, objectives, methodology, and conclusion.

The portfolio is cumulative over the course of the 30-unit program. The final two courses (EDTE 212 - Critical Literacy Leadership Practicum and EDTE 242R - Critical Literacy Student Practicum) ensure completion and finalization, including ensuring that all PLOs and standards are met. EDTE 212 addresses aspects of literacy leadership, and EDTE 242R addresses candidates' literacy teaching. The portfolio also serves as a tool that candidates can use for providing ongoing professional learning for their peers, as it contains examples of assessments and instruction that can be shown to colleagues in professional learning settings. A tertiary purpose for the portfolio is for participants to use it to advance their professional opportunities, such as providing evidence of their accomplishments to future employers.

Master's Requirements (30 units)

Core Courses (20 units)

- EDTE 216 - Culturally Responsive Assessment for Instruction 4 *unit(s)*
- EDTE 215 - Culturally and Linguistically Sustaining Literacy Instruction 4 *unit(s)*
- EDTE 220 - Advanced Critical Literacy Instruction 3 *unit(s)*
- EDTE 223 - Politics, Theory and Practice of Critical Literacy 3 *unit(s)*
- EDTE 245 - Assessment and Instruction for Culturally Sustaining Literacy Leadership 3 *unit(s)*
- EDTE 290C - Critical Literacy Research Methods 3 *unit(s)* (GWAR)

Practicums (4 units)

- EDTE 217A - Practicum Culturally Responsive Assess to Instruct 2 *unit(s)*
- EDTE 217B - Practicum: Culturally Sustaining Literacy Instruct 2 *unit(s)*

Culminating Experience (6 units)

- EDTE 212 - Critical Literacy Leadership Practicum 3 *unit(s)*
- EDTE 242R - Critical Literacy Student Practicum 3 *unit(s)*

Total Units Required (30 units)

Special Education, MA

- Admission Requirements
- Requirements for Advancement to Candidacy
- University Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

Advisors: Dr. Andrea Golloher, Dr. Peg Hughes, Dr. Sudha Krishnan, Dr. Saili Kulkarni, Dr. Hyun-Sook Park, and Dr. Lisa Simpson.

The MA in Special Education is a 30-unit program, offered by the Department of Special Education, that prepares candidates to be transformative educators who possess the knowledge and skills necessary to creatively and holistically meet the intersectional identities (dis/ability, race, gender, linguistic, and ethnic identities) of all learners, and who work as change agents to create equitable and inclusive environments in schools and communities in order

to reimagine accessible schooling. Students complete an MA action research project in their fieldwork setting. Students may opt to complete the MA simultaneously with the Education Specialist credential.

Department of Special Education Master's Program Admission Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system at calstate.edu/apply and meet all the university and department admission requirements. See the GAPE Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on GAPE's Graduate Program Test Requirements webpage. For TOEFL requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Information in this Catalog.

1. CSU Apply application with statement of purpose for admission to SJSU.
2. Bachelor's degree from a regionally accredited institution of higher education.
3. Grade point average (GPA) of at least 2.75 in last 60 units of coursework.
4. 45 hours of Pre-professional experience.
5. Certificate of Clearance (fingerprint clearance) from California Commission on Teacher Credentialing (CTC).
6. Two letters of recommendation.

If completing MA simultaneously with the Education Specialist Credential must also submit:

7. Verification of Basic Skills or Passing scores on the California Basic Education Skills Test (CBEST) - submit by end of first semester in program.

8. Verification of Subject Matter Competency or California Subject Examination for Teachers - submit by end of first semester in program.

Upon review of submitted document applicants may be called for a department interview. Applicants are encouraged to attend a department information session for more information about the application process and program offerings. Students must complete each course with a B or higher and maintain a GPA of 3.0 in the program.

Requirements for Advancement to Candidacy

To be advanced to candidacy for the Master of Arts degree, a student must first meet the university requirements for the degree as stated in the Advancement to Candidacy section. Applicants may be admitted to classified standing if they meet the admissions requirements for both the Graduate Division and the department. The minimum requirements for the program are a bachelor's degree in any discipline and a minimum 2.75 GPA at entrance. Candidates must maintain a 3.0 GPA for Advancement to Candidacy.

University Requirements

Candidacy denotes that a student is fully qualified to complete the final stages of the Master of Arts degree. General university requirements for advancement to candidacy are detailed in the Graduate Policies and Procedures section of this catalog. Candidacy includes successful completion of the Graduation Writing Assessment Requirement (GWAR). Students satisfy the GWAR, by successfully completing EDSE 285 - Seminar on Issues Related to Teaching Exceptional Individuals with a grade of B or higher.

Department Requirements

1. Complete the Graduate Writing Assessment Requirement (GWAR) by completing EDSE 285 with a grade of B or higher.
2. Maintain an overall graduate GPA of 3.0 or higher
3. Meet with your graduate advisor to complete the Petition for Advancement to Graduate Candidacy form.

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Students must pass the Graduation Writing Assessment Requirement (GWAR) course and Culminating experience identified below..

Master's Requirements (30 units)

Core Courses (24 units)

- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)*
- EDSE 218D - Teaching Students with Autism Spectrum Disorders 3 *unit(s)*
- EDSE 224 - Methods for Emergent Bilinguals with Disabilities 1-3 *unit(s)* OR EDSE 124 - Teach for Social Justice: Language & Disability 3 *unit(s)* (V)
- EDSE 228A - Topics in Collaboration and Transition 3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*
- EDSE 279 - Positive Behavior Support 3 *unit(s)*

Complete One From:

- EDSE 215 - Assessing Students with Disabilities 3 *unit(s)*
- EDSE 108 - Assessing Young Children 3 *unit(s)*

Complete One From:

- EDSE 213A - Methods for Students with Extensive Support Needs 3 *unit(s)*
- EDSE 221 - Methods for Young Children with Disabilities 3 *unit(s)*
- EDSE 230A - Inclusive Pedagogy for Students with M/MSN 3 *unit(s)*

Research Course (3 units)

- EDSE 285 - Intro to Action Research in Special Education 3 *unit(s)*

Culminating Experience (3 units)

Choose one of the following:

- **Plan A (Thesis):** EDSE 299 - Master's Thesis 3 *unit(s)*
Students selecting the Plan A option will write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. Thesis proposals must be

approved by the graduate committee made up of two department faculty and a third faculty member from outside the department.

- **Plan B (Project):** EDSE 220 - Advanced Research Projects in Special Education 3 *unit(s)*
Students selecting the Plan B option will complete a master's project or research paper. This a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. The final paper includes the significance, objectives, methodology and a conclusion or recommendation.

Total Units Required (30 units)

The maximum number of graduate units (with a grade of "B" or better) that can be transferred from approved accredited universities is 9 units. Continuing education and extended studies units are not accepted for transfer. Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Speech Language Pathology, MS

- Admissions Requirements
- Advancement to Candidacy
- Graduation Requirements
- Master's Requirements (66 units)
- Program Learning Outcomes

The Department of Communicative Disorders and Sciences (CDS) Master of Science degree program in Speech Language Pathology offers an in-depth study of communication disorders with an emphasis on articulation and phonological disorders, fluency disorders (stuttering), augmentative and alternative communication (AAC), voice disorders, dysphagia (swallowing disorders), neurogenic disorders, hearing disorders, language disorders, social aspects of communication, and cognitive-communication disorders. Courses and clinical training opportunities place a high priority on assessment and intervention within an evidence-based, ethical, inclusive, and culturally responsive framework. Clinical practices are completed in varied settings, including the Kay Armstead Center for Communicative Disorders housed in the department. Signature speech, language and hearing services include screenings, evaluations, and a variety of therapy clinics including an AAC clinic, a voice clinic, a clinic for adults with intellectual disability, a clinic for children with language disorders, the Spartan Aphasia Research Clinic, and a summer camp for children who stutter. Students have clinical opportunities for working with toddlers, children, adolescents, and adults in multiple settings, including public, private and charter schools (preschool, elementary, middle, high schools), rehabilitation agencies, private practices, skilled nursing facilities, and hospitals.

Admission Requirements

The MS in Speech Language Pathology (MS-SLP) program requires a two-step application process for admission:

- University Application: Cal State Apply
- Department Application: Communication Sciences and Disorders Centralized Application Service (CSDCAS)

Both applications must be completed by the deadline to be considered for admission.

University Requirements

Applicants must apply through the CSU admissions portal, Cal State Apply, and meet the graduate admission requirements at SJSU.

Department Requirements

Applicants must also apply through the Communication Sciences and Disorders Centralized Application Service (CSDCAS), and meet the program minimum eligibility and requirements.

The program admits students to either classified or conditionally classified standing based on the completion of program prerequisites before program start date. Eligible applicants who will have completed program prerequisites before enrolling in the program may apply to the two-year program and be considered for admission to classified standing. Eligible applicants who will not have completed all prerequisites before enrolling in the program should consider applying to the three-year extended program and be considered for admission to conditionally classified standing.

Instruction for applying to the MS in Speech-Language Pathology Program

Applicants from countries in which the official language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Admissions Test Requirements webpage.

Advancement to Candidacy

Students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MS degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR). The department's GWAR is met by completing the EDSP 221 course with a grade of B or better.

Graduation Requirements

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Completion of the degree also requires a minimum grade of "B" in all courses taken and a minimum overall GPA of 3.0.

Degree Requirements

Students are expected to complete all required courses, the culminating experience, clinical practica, and observation requirements. To meet degree requirements, candidates for the MS degree must maintain a 3.0 GPA in all courses with no single course grade below a B- (B minus) and no single clinical practicum below a B. Students who earn less than a B- (B minus) in any required course or less than a B in any clinical practicum must retake the course and meet the minimum grade requirement.

1. Complete 24 practicum/fieldwork units including EDSP 277 (3 times in 3 different types of clinics), EDSP 276, EDSP 269 (School-based SLP placement), and EDSP 278 (Non-school based SLP placement). Candidates for the Master's degree must accumulate a minimum of 375 required clock hours in a supervised clinical practicum in three distinctly different settings, and a minimum of 25 hours of observation;
2. Complete 39 units of required academic courses, corresponding to national and state accreditation standards in Speech-Language Pathology;
3. Apply for graduation via MySJSU; and,

4. Complete the Culminating Experience: Successfully pass the Comprehensive Exam or complete a Master's Thesis as a required culminating experience in the graduate program.

Prior to providing any speech, language, or communication assessment or intervention services during clinical practica, students must show evidence of all of the following:

- a. Certificate of Clearance;
- b. Negative TB (tuberculosis) test;
- c. Negative Hepatitis test;
- d. Physical Clearance to provide speech-language pathology services;
- e. Successful completion of online training related to HIPAA (Health Insurance Portability and Accountability Act);
- f. CPR (Cardiopulmonary resuscitation) Certification; and
- g. Compliance with additional practicum site policies and requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). GWAR in this program is fulfilled by EDSP 221.

Culminating Experience

All students in the Master of Science (MS) in Speech-Language Pathology program must successfully complete the culminating experience requirement by selecting one of the following two options.

Plan A (Thesis)

Students who have a strong interest in research may be approved to complete the Thesis (Plan A). It requires students to secure a thesis advisor and a thesis committee and enroll in EDSP 299 during the final semester. The thesis must be defended and approved by a thesis committee and follow the College of Graduate Studies Master's Thesis and Doctoral Dissertation Guidelines.

Plan B (Comprehensive Exam/Project)

The comprehensive exam/project assesses broad knowledge and competency across topics in speech, language, hearing, cognitive-communication, and swallowing disorders. It requires students to enroll in [EDSP 298](#) during the Spring semester of the final year.

Program Delivery

On-Campus Program

The on-campus MS-SLP program offers a regular (two-year) and an extended (three-year) plan of study. The two-year plan is designed for students with completed prerequisite coursework or a Bachelor's degree in communication disorders and sciences. The two-year plan requires continuous enrollment over five semesters, including summer. The three-year plan is designed for students without prerequisite coursework or a degree in communication disorders and sciences. The three-year plan includes one year of leveling coursework followed by the regular two-year plan of study. For detailed information about the program, see the MS-SLP program webpage.

Online/Hybrid Program (Special Session)

SJSU SPEAKS (Speech-Language Pathology Education and Applied Knowledge and Skills) is a two-year online graduate program that requires continuous enrollment over five semesters. In SJSU SPEAKS, academic courses are completed online (with asynchronous sessions and synchronous sessions usually on weekday evenings), and clinical placements are completed in-person. The SPEAKS program degree requirements and the speech-language pathology competencies covered are the same as those of the on-campus MS-SLP program.

Special Session Information

SJSU SPEAKS is an academic program offered through Special Session, operated by SJSU Professional and Continuing Education (PaCE). Registration and enrollment in a Special Session must use the special session application form and will follow special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit Special Session for more information.

Master's Requirements (66 units)

Core Courses (39 units)

- EDSP 221 - Research Seminar in Communicative Disorders 3 *unit(s)* (GWAR) (Students must earn a B (3.0) or better in EDSP 221)
- EDSP 222 - School Age Language, Literacy, and Social Communication 3 *unit(s)*
- EDSP 250 - Seminar in Voice Disorders 3 *unit(s)*
- EDSP 251 - Seminar in Phonological Disorders 3 *unit(s)*
- EDSP 252 - Seminar Fluency Disorders 3 *unit(s)*
- EDSP 254 - Seminar in Neurological Disorders 3 *unit(s)*
- EDSP 255 - Seminar in Motor Speech Disorders 3 *unit(s)*
- EDSP 259 - Seminar in Language Disorders in Children 3 *unit(s)*
- EDSP 260 - Seminar in Dysphagia 3 *unit(s)*
- EDSP 262 - Speech and Language in a Cross-Cultural Society 3 *unit(s)*
- EDSP 264 - Contemporary Professional Issues 3 *unit(s)*
- EDSP 265 - Seminar in Cognitive Disorders 3 *unit(s)*
- EDSP 288 - Seminar in AAC and Communication Disorders 3 *unit(s)*

Practicum (24 units)

Complete the following 24 practicum/fieldwork units for a minimum of 400 clinic hours (375 practicum hours + 25 observation hours):

- EDSP 269 - Field Experience in Public Schools - Speech Pathology and Audiology 6 *unit(s)*
- EDSP 276 - Practicum in Advanced Assessment 3 *unit(s)*
- EDSP 277 - Advanced Practicum-Speech Pathology 1-3 *unit(s)* (Students take EDSP 277 (3 units) three times for a total of 9 units)
- EDSP 278 - Clinical Management and Practicum 6-10 *unit(s)* (Students take EDSP 278 once for a total of 6 units)

Culminating Experience (3 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- EDSP 299 - Master's Thesis 1-4 unit(s) (3 units required)

Plan B (Comprehensive Exam/Project)

- EDSP 298 - Special Studies 1-3 unit(s) (3 units required)

Total Units Required (66 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Teaching, Critical Bilingual Education (Spanish) Concentration, MAT

- Admissions Requirements
- Conditionally Classified Standing
- Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (34 units)
- Program Learning Outcomes

The Master of Arts Teaching (MAT) degree program, offered by the Department of Teacher Education, prepares teacher candidates to engage in social justice teaching practices, contribute to the development of cultural literacy, provide education that promotes democracy, and develop content knowledge expertise to teach in urban and suburban schools. The program additionally prepares teacher candidates to provide instruction for multilingual learners and students with special needs. Teacher candidates also will learn to set up a supportive classroom environment based on social-emotional learning principles and experience collaborative co-teaching experiences with successful mentor teachers in the field. Finally, teacher candidates will design, carry out, and report on classroom-based teacher inquiry.

Bilingual Candidates admitted to the Critical Bilingual Concentration will specialize further in the application of the knowledge and skills developed in the MAT to current issues in bilingual education. Additionally, they will engage with content specific to bilingual education that prepares them as transformational bilingual educators and leaders in their communities.

Admissions Requirements

Applicants must submit a complete graduate application to the Multiple or Single Subject Credential Program by applying through CSU Cal State Apply and meet all the university admissions requirements. A minimum 2.5 GPA is required. Provided that admitted teacher candidates remain in good standing, those who want to pursue the MAT degree will complete a program transfer (credential to MAT) during their penultimate semester, usually semester two of a three-semester program. That process allows candidates to complete the MAT in a more financially advantageous way (for themselves). For additional information on admissions, see the Teacher Education

Department website and the SJSU Graduate Admissions website. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Admissions Test Requirements webpage. For TOEFL requirements, see the Graduate Admissions section.

Prospective Critical Bilingual Concentration candidates must meet additional requirements (outlined below) in an admission process conducted by the Coordinator/Faculty advisor: Dr. Eduardo R. Muñoz-Muñoz.

- A. Candidates must meet all university admissions requirements.
- B. Program Materials required by the Department are listed on the Department of Teacher Education website. The materials enumerated below must be uploaded to the Cal State Apply application. For additional details go to the Department of Teacher Education website.

1. **Subject Matter Competency (Required)**

The Subject Matter Competency Requirement can be met in a variety of ways including via the CSETs, approved degree major, CTC-approved subject matter preparation program, or qualified coursework that meets each of the CTC subject matter domains. Information about meeting this requirement for current and prospective SJSU students can be found here: Meeting the Subject Matter Competency Requirement. Additional information can be found on the CTC website. Note that the requirements for Subject Matter Competence at the point of admission may differ for the Multiple and Single Subject Programs.

2. **Basic Skills Requirement (Required)**

The Basic Skills Requirement can be met in a variety of ways including via the CBEST, SAT/ACT/AP scores, qualifying coursework, and more. Information about meeting this requirement for current and prospective SJSU students can be found here: Meeting the Basic Skills Requirement. Additional information can be found on the CTC website.

3. **Pre-Professional Experience (Highly recommended)**

Complete a minimum of 45 observation hours of Pre-Professional Experience and upload a completed/signed Pre-Professional Experience Form from the Department of Teacher Education website in the Cal State Apply portal to verify your experience. Pre-Professional Experience in a public school during the regular school day schedule is highly recommended for admission. You may contact any California public school and let them know that you are applying to the SJSU Teaching Credential program and need to complete your 45 observation hours of Pre-Professional Experience. SJSU courses that fully meet this requirement are: LSTP 185 and CHAD 159.

4. **Certificate of Clearance (Required)**

There are 3 steps to obtain a Certificate of Clearance (CoC): Do not wait until the last minute to request this item, as it can take weeks for CTC to issue. For detailed information about how to complete these steps, go to the Credential Information website.

- Step 1 - Live Scan Service
- Step 2 - Certificate of Clearance Application via CTC
- Step 3 - Upload a pdf of the granted Certificate of Clearance to your CalState Apply application

Note: A US Social Security or Tax Identification Number is required to obtain a COC. If you are an international student, please consult an advisor in our International Student & Scholars Services (ISSS) to see if this is possible on your particular visa.

5. **Statement of Purpose (2 required)**

In your Statement of Purpose, explain how you arrived at your decision to become a teacher. For *Critical Bilingual Concentration Candidates*: A second Statement of Purpose is required for Bilingual Authorization Spanish applicants and must be written in Spanish. This second essay is not a

translation of the first, but it may have overlapping content. The statement should explain your interest in bilingual education.

6. **Resume (Required)**

Prepare a brief (one page) resume that details your college-level academic, employment, and volunteer experiences. In describing a position that you held (employment or volunteer service), highlight the duties you performed and any awards/accomplishments.

7. **Two Letters of Recommendation (Required)**

Two professional letters of recommendation are required and are requested within your CalState Apply application. Letters must be written within the last 2 years and should be from someone in a supervisory role. Up to four letters of recommendation may be submitted.

8. **Transcripts (Required)**

Official transcripts (sealed or electronic) from each college/university attended, aside from SJSU, must be submitted. Transcripts will be submitted directly to San Jose State, not through your CalState Apply application. Information about how to submit transcripts can be found at the SJSU Graduate Admissions website. International transcripts must go through additional evaluation steps and will take additional time to prepare and submit. Please see the Graduate Admissions website above for more information.

9. **Interview**

Most applicants to the program are recommended for an interview.

- For *Critical Bilingual Concentration Candidates*: applicants will participate in an interview conducted in Spanish to determine oral proficiency and programmatic dispositions and alignment with the MAT program and the bilingual goals. Upon graduation, bilingual candidates also need to have passed the state test Languages Other than English (LOTE), subtest 3 or equivalent, in order to be eligible for the associated bilingual authorization (separate from the concentration).

10. **Language Proficiency (required upon graduation)**

Critical Bilingual Concentration Candidates also need to pass the state test Languages Other than English (LOTE), subtest 3, in order to be eligible for the associated bilingual authorization (separate from the concentration). Alternate options include a BA in Spanish or a degree from a Spanish speaking country. Based on availability due to cohort size, candidates may opt to pursue a portfolio assessment option to satisfy the language proficiency requirement.

Conditionally Classified Standing

Because the MAT program is nested within the Multiple Subject Credential and Single Subject Credential program, which requires applicants to meet departmental admissions requirements, admission to conditionally classified standing is not appropriate and is not permitted.

Advancement to Candidacy

Candidacy denotes that a student is fully qualified to complete the final stages of the MAT degree. Requirements for advancement to candidacy, including the Graduation Writing Assessment Requirement (GWAR), are listed on the Graduate Admissions and Program Evaluation website.

Department Requirements

1. Complete 12 units of core courses (EDTE 224, EDTE 260, EDTE 262, and EDTE 294) with a grade of "C" or better in each one.
2. Complete the 3-unit Critical Bilingual Education (Spanish) Concentration foundations course, EDTE 208B, with a grade of "C" or better.
3. Complete the 3-unit Critical Bilingual Education (Spanish) Concentration research methods course, EDTE 250B, with a grade of "C" or better.
4. Maintain an overall graduate GPA of 3.0 or higher.
5. Note: Grades of "C-" or lower will remain on a student's record, be computed for GPA, and require a course retake.
6. Critical Bilingual Education (Spanish) Concentration MAT candidates who also are Single Subject Credential candidates must complete each of their subject-area methods courses with a grade of "B" or better.

Requirements for Graduation

University Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Completion of the degree also requires a minimum grade of "C" in all courses taken and a minimum overall GPA of 3.0.

Department Requirements

1. Complete 12 units of core courses (EDTE 224, EDTE 260, EDTE 262, and EDTE 294) and 10 units of concentration courses (EDTE 208B, EDTE 250B, and EDTE 297B-twice).
2. Complete at least 6 units of subject-area curriculum and instruction courses.
3. Successfully receive approval for a project proposal (Plan B) or thesis proposal (Plan A) while completing EDTE 250B.
4. Apply for graduation via MySJSU (through one.SJSU.edu).
5. Successfully complete either a project / portfolio (Plan B, EDTE 298) or thesis (Plan A, EDTE 299).
6. Satisfy the culminating experience requirements, which typically consist of successful completion of the project / portfolio or thesis (i.e., 5 above) AND a presentation on the same at the department's colloquium, which is held near the end of each fall and spring semester.

Culminating Experience

Plan A (Thesis)

Students selecting the Plan A option will write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. Thesis proposals must be approved by the graduate committee, which is made up of two department faculty and a third faculty member from outside the department. Students enroll in EDTE 299 - Master's Thesis.

Plan B (Portfolio or Project)

Students selecting the Plan B option will complete a master's portfolio or project report. Either is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It

is described and summarized, its significance, objectives, methodology and a conclusion and / or implications. Students enroll in EDTE 298 - Special Studies in Education (for PK-3), EDTE 298 - Special Studies in Education or CHAD 298 - Special Studies in Child and Adolescent Development.

Master's Requirements (34 units)

Core Courses (12 units)

- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Critical Bilingual Education Concentration (10 units)

- EDTE 208B - Bilingual Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 250B - Qualitative Research in Bilingual Education 3 *unit(s)* (GWAR)
- EDTE 297B - Advanced Issues in Bilingual Education 1-3 *unit(s)* (Course should be taken twice.)

Curriculum and Instruction Tracks (6-9 units)

Complete the Elementary Education Track (Multiple Subject Credential) or Secondary Education Track (Single Subject Credential):

Elementary Education Track (9 units)

- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDEL 108B - Curriculum: Science 3 *unit(s)*
- EDEL 108C - Curriculum: Social Studies 3 *unit(s)*

Secondary Education Track (6-7 units)

- EDTE 282 - Assessment and Evaluation 3 *unit(s)*

Methods (3-4 units)

Complete 3-4 units:

- ARED 238 - Principles of Art Education 3 *unit(s)*
- ENED 353 - Methods of Teaching English 4 *unit(s)*
- FLED 380 - Teaching Foreign Languages 3 *unit(s)*
- KNED 339 - Instructional Materials and Procedures in Physical Education 3 *unit(s)*
- MTED 394 - Secondary Mathematics Methods 3 *unit(s)*
- MUED 370A - Methodology for Music Educators: Elementary K-8 2 *unit(s)*
- MUED 370B - Methodology for Music Educators: Secondary 2 *unit(s)*
- SCED 273 - Secondary School Science 3 *unit(s)*

- SSED 378 - Social Science Methods 3 *unit(s)*

Culminating Experience (3-6 units)

MAT Presentation at Department Colloquium AND satisfactory completion of MAT Project / Portfolio or Thesis.

Complete Plan A (Thesis) or Plan B (Portfolio or Project):

Plan A (Thesis)

- EDTE 299 - Master's Thesis 1-6 *unit(s)*

Plan B (Portfolio or Project)

- EDTE 298 - Special Studies in Education 1-6 *unit(s)*

Total Units Required (34 units)

Upon completion of the credential requirements, students must have achieved an SJSU cumulative grade point average of 3.0 in order to be recommended for a credential.

Teaching, MAT

- Admissions Requirements
- Conditionally Classified Standing
- Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Arts Teaching (MAT) degree program, offered by the Department of Teacher Education, prepares students to engage in social justice teaching practices, contribute to the development of cultural literacy, provide education that promotes democracy, and develop content knowledge expertise to teach in urban and suburban schools. All the program courses will prepare enrolled students to provide instruction for multilingual learners and students with disabilities in general education classrooms. Enrolled students also will learn to set up a supportive classroom environment based on social-emotional learning principles and experience collaborative co-teaching experiences with successful mentor teachers in the field. Finally, students will design, carry out, and report on classroom-based teacher inquiry. The MAT is earned in combination with a teaching credential and is not a stand-alone Master's Degree.

Admissions Requirements

Applicants must submit a complete application to the Multiple Subject, Single Subject, or PK-3 credential program by applying through the CSU Cal State Apply portal and meet all the university admissions requirements. Information about current admission requirements can be found on the Teacher Education Department website.

Provided that admitted teacher candidates remain in good standing, those who want to pursue the MAT degree will complete a program transfer (credential to MAT) during their credential program. For additional information on admissions, see the SJSU Graduate Admissions website and graduate admissions requirements section.

Applicants from countries in which the native language is not English or who have an international transcript from outside the US/Canada must achieve a minimum English-language proficiency test score as indicated on Graduate Admissions Test Requirements webpage. This applies to applicants on various types of visas AND to applicants who have a degree from outside the USA/Canada. For TOEFL requirements, see the Graduate Admissions section. In addition, there are additional transcript evaluation requirements. Deadlines for applying may differ.

- A. Candidates must meet all university admissions requirements.
- B. Minimum grade point average is 2.5.
- C. The materials enumerated below must be uploaded to the Cal State Apply application. For additional details go to the Department of Teacher Education website.
- D.
 1. **Subject Matter Competency (via CSET, Teacher Prep Program, or approved majors).** The Subject Matter Competency Requirement can be met in a variety of ways including via the CSETs, approved degree major, CTC-approved subject matter preparation program, or qualified coursework that meets each of the CTC subject matter domains. Information about meeting this requirement for current and prospective SJSU students can be found here: [Verifying Subject Matter Competence](#). Additional information can be found on the CTC website. Note that the requirements for Subject Matter Competence at the point of admission differ for the PK-3, Multiple and Single Subject Programs.
 2. **Verification of Meeting the Basic Skills Requirement (CBEST or alternative)**
The Basic Skills Requirement can be met in a variety of ways including via the CBEST, SAT/ACT/AP scores, qualifying coursework, and more. Information about meeting this requirement for current and prospective SJSU students can be found at the [Meeting the Basic Skills Requirement](#) webpage. Additional information can be found on the CTC website. Note that the Basic Skills Requirement is not required for the PK-3 Credential program.
 3. **Pre-Professional Experience** (Highly recommended)
Complete a minimum of 45 observation hours of Pre-Professional Experience and upload a completed/signed Pre-Professional Experience Form from the Department of Teacher Education website to the Cal State Apply portal to verify your experience. For Single Subject: At least 25 hours should be in secondary (middle/high) public school setting in credential subject area and 20 hours may be any work with youth. (Subject area teacher prep programs also have accepted field experience coursework). For Multiple Subject: Pre-Professional Experience in a public school during the regular school day schedule is recommended for admission. SJSU courses accepted to meet the Multiple Subject Requirement are: LSTP 185 and CHAD 159. For PK-3 ECE Specialist: TBA by State of California. You may contact any California public school and let them know that you are applying to the SJSU Teaching Credential program and need to complete your 45 observation hours of Pre-Professional Experience.

For PK-3 ECE Specialist Instruction: Pre-Professional Experience in an early childhood or elementary classroom setting is recommended for admission. SJSU Courses accepted to meet this requirement are: ChAD 159, ChAD 160, and LSTP185. You may contact any California public school and let them know that you are applying to the SJSU Teaching Credential program and need to complete your 45 observation hours of Pre-Professional Experience.
 4. **Certificate of Clearance**
There are 3 steps to obtain the Certificate of Clearance (CoC): Do not wait until the last minute to

request this item, as it can take weeks for the CCTC to issue. For detailed information about how to complete these steps, go to the Credential Information website.

Step 1 - Live Scan Service

Step 2 - Certificate of Clearance Application via CCTC

Step 3 - Upload a pdf of the granted Certificate of Clearance to your CalState Apply application

Note: A US Social Security or Tax Identification Number is required to obtain a COC. If you are an international student, please consult an advisor in our International Student & Scholars Services (ISSS) to see if this is possible on your particular visa.

5. **Statement of Purpose**

In your Statement of Purpose, explain how you arrived at your decision to become a teacher. A second Statement of Purpose is required for Bilingual Authorization applicants. Spanish Bilingual Authorization applicants must write their second statement in Spanish. Mandarin or Vietnamese Bilingual Authorization applicants must write their second statement in English.

6. **Resume**

Prepare a brief (one-to-two page) resume that details your college-level academic, employment, and volunteer experiences. In describing a position that you held (employment or volunteer service), highlight the duties that you performed and any awards/accomplishments that you would like us to know about.

7. **Two Letters of Recommendation**

The letters of recommendation are requested within CalState Apply. Letters must have been written within the last two years and should be from someone in a supervisory role. Letters from relatives or friends should not be submitted. Up to four letters of recommendation may be submitted.

- E. Official transcripts from each college/university attended will be submitted directly to SJSU Graduate Admissions. Transcripts may be submitted electronically or by mail, noting that official transcripts must be in a sealed, unopened envelope.

Conditionally Classified Standing

Because the MAT program is nested within the PK-3 ECE Specialist Instruction Credential, Multiple Subject Credential and Single Subject Credential programs, which require applicants to meet departmental admissions requirements, admission to conditionally classified standing is not appropriate and is not permitted.

Advancement to Candidacy

Candidacy denotes that a student is fully qualified to complete the final stages of the MAT degree. Requirements for advancement to candidacy, including the Graduation Writing Assessment Requirement (GWAR), are listed on the Graduate Admissions and Program Evaluation website.

Department Requirements

1. Complete 12 units of core courses: EDTE 262 and (for Multiple or Single Subject Credential candidates) EDTE 224, EDTE 294, and EDTE 260, or (for PK-Grade 3 Credential candidates) CHAD 272, EDSE 104, and EDSE 269 with a grade of "C" or better in each one.
2. Complete the 3-unit MAT Foundations and Graduation Writing Assessment Requirement (GWAR) course, EDTE 208, with a grade of "C" or better.

3. Complete the 3-unit research methods course EDTE 250, or (for PK-3) EDTE 250 or CHAD 260A to develop a project proposal (Plan B) or a thesis proposal (Plan A) with a grade of "C" or higher.
4. Maintain an overall graduate GPA of 3.0 or higher.
5. MAT candidates who also are Single Subject Credential candidates must complete each of their **subject-area methods** courses with a grade of **"B" or better**.

Requirements for Graduation

University Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Completion of the degree also requires a minimum grade of "C" in all courses taken and a minimum overall GPA of 3.0.

Department Requirements

1. Complete 18 units of core courses (EDTE 208, EDTE 224 or CHAD 272, EDTE 250 or CHAD 260A, EDTE 260 or EDSE 269, EDTE 262, and EDTE 294 or EDSE 104).
2. Complete at least 6 units of subject-area curriculum and instruction courses.
3. Successfully receive approval for a project proposal (Plan B) or thesis proposal (Plan A) while completing EDTE 250 or CHAD 260A.
4. Apply for graduation via MySJSU (through one.SJSU.edu).
5. Successfully complete either a portfolio or project (Plan B, EDTE 298 or CHAD 298) or thesis (Plan A, EDTE 299).
6. Satisfy the culminating experience requirements, which typically consist of successful completion of the portfolio, project, or thesis (i.e., 5 above) AND a presentation of the same at the department's colloquium, which is held near the end of each fall and spring semester.

Culminating Experience

Plan A (Thesis)

Students selecting the Plan A option will write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. Thesis proposals must be approved by the graduate committee, which is made up of two department faculty and a third faculty member from outside the department. Students enroll in EDTE 299 - Master's Thesis.

Plan B (Portfolio or Project)

Students selecting the Plan B option will complete a master's portfolio or project report. Either is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized, its significance, objectives, methodology and a conclusion and / or implications. Students enroll in EDTE 298 - Special Studies in Education, or (for PK-3) EDTE 298 - Special Studies in Education or CHAD 298 - Special Studies in Child and Adolescent Development.

Master's Requirements (30 units)

Foundations Core Courses (6 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*

Curriculum and Instruction Tracks (24 units)

Complete the Elementary Education Track (Multiple Subject Credential) or Secondary Education Track (Single Subject Credential), or one of the PK-Grade 3 Tracks (PK-3 Early Childhood Education Specialist Credential).

Elementary Education Track (24 units)

Additional Foundations Courses (9 units)

- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Curriculum / Instruction (9 units)

- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDEL 108C - Curriculum: Social Studies 3 *unit(s)*
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*

Research (3 units)

- EDTE 250 - Qualitative Research in Education 3 *unit(s)*

Culminating Experience (3 units)

Complete one of the following:

- EDTE 298 - Special Studies in Education 1-6 *unit(s)*
- EDTE 299 - Master's Thesis 1-6 *unit(s)*

Secondary Education Track (24 units)

Additional Foundations Courses (9 units)

- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Curriculum / Instruction (3 units)

- EDTE 282 - Assessment and Evaluation 3 *unit(s)*

Methods (3-4 units)

Complete 3-4 units from the following:

- ARED 238 - Principles of Art Education 3 *unit(s)*
- ENED 353 - Methods of Teaching English 4 *unit(s)*
- FLED 380 - Teaching Foreign Languages 3 *unit(s)*
- KNED 339 - Instructional Materials and Procedures in Physical Education 3 *unit(s)*
- MTED 394 - Secondary Mathematics Methods 3 *unit(s)*
- MUED 370A - Methodology for Music Educators: Elementary K-8 2 *unit(s)*
- MUED 370B - Methodology for Music Educators: Secondary 2 *unit(s)*
- SCED 273 - Secondary School Science 3 *unit(s)*
- SSED 378 - Social Science Methods 3 *unit(s)*

Research (3 units)

- EDTE 250 - Qualitative Research in Education 3 *unit(s)*

Culminating Experience (5-6 units)

Complete one of the following:

- EDTE 298 - Special Studies in Education 1-6 *unit(s)*
- EDTE 299 - Master's Thesis 1-6 *unit(s)*

PK-Grade 3 Track - Early Childhood (24 units)

Additional Foundations Courses (9 units)

- CHAD 272 - Seminar in Early Childhood Development 3 *unit(s)*
- EDSE 104 - Early Intervention for Children with Disabilities 3 *unit(s)*
- EDSE 269 - Supportive Learning Environments for Young Children 3 *unit(s)*

Curriculum / Instruction (9 units)

- CHAD 261 - Seminar in Early Childhood Curriculum 3 *unit(s)*
- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*

Research (3 units)

- CHAD 260A - Seminar in Child and Adolescent Development: Research 3 *unit(s)*

Culminating Experience (3 units)

- CHAD 298 - Special Studies in Child and Adolescent Development 3-6 *unit(s)*

PK-Grade 3 Track - Primary Grades (24 units)

Additional Foundations Courses (9 units)

- CHAD 272 - Seminar in Early Childhood Development 3 *unit(s)*
- EDSE 104 - Early Intervention for Children with Disabilities 3 *unit(s)*
- EDSE 269 - Supportive Learning Environments for Young Children 3 *unit(s)*

Curriculum / Instruction (9 units)

- CHAD 261 - Seminar in Early Childhood Curriculum 3 *unit(s)*
- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*

Research (3 units)

- EDTE 250 - Qualitative Research in Education 3 *unit(s)*

Culminating Experience (3 units)

- EDTE 298 - Special Studies in Education 1-6 *unit(s)*

Total Units Required (30 units)

Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in order to be recommended for a credential.

Doctoral

Educational Leadership, EdD (Fully Online)

The fully online Ed.D. Program in Educational Leadership at San José State University is dedicated to developing outstanding education leaders who are well prepared to meet the demands and challenges of schools, today and in the future. The program builds on the view that educational leaders serve in learner-centered systems in which inquiry, learning, equity and social justice, and human care are central concerns. The fully online Ed.D. Program is designed so that it may be completed in nine semesters over three years. This time frame allows for the completion of all coursework, pre proposal/literature review, dissertation proposal, and completion of the dissertation. The fully online program begins in Summer Year 1 with intensive five- and ten-week summer sessions that meet at least two days per week. Fall and spring semester classes are scheduled as fully online classes and meet on evenings or weekends during the semester. The second summer involves an optional global component that includes a two-week educational and cultural experience outside of the United States. It is anticipated that students will concurrently be working full time as they pursue their doctoral studies.

Additional information is available in the Educational Leadership Department Office or website: www.sjsu.edu/edd.

Admissions Requirements

Candidates must meet all university and Ed.D. Program admission requirements. The university-level graduate application is separate from the application that is sent to the Ed.D. Program. Minimum requirements for the program include a master's degree from an accredited institution and a 3.0 grade point average (B or better) in the last 60 semester units completed. In exceptional cases, experience and service will be considered in lieu of the Master's degree requirement.

In addition to the university admissions requirements as outlined in this catalog, applicants must meet the Ed.D. Program requirements below.

- Three letters of recommendation attesting leadership ability and potential for success in a doctoral program. One of the letters should be from a school district employer indicating support for participation in the doctoral program. Recommendation forms are available on the Ed.D. Leadership Program webpage at www.sjsu.edu/edd. Recommendation letters should be submitted directly from the person writing the recommendation letter to edd-leadership@sjsu.edu.
- Current professional resume or curriculum vitae that includes leadership experience and/or leadership strengths as indicated through job experiences, administrative credentials, and/or other evidence of leadership capacity and practice. Resumes or vitae should not exceed 4 pages.
- A written statement of purpose that explains the reasons for pursuing doctoral studies in educational leadership. The statement should include relevant personal and professional history and background, some of the core commitments and principles that drive one's career goals, and challenges facing education and educational leadership in California, nationally, and globally. Statements should not exceed 3 pages, single-spaced.
- A recent writing sample (last 5 years) of an individually authored paper, research projects, or reports (maximum of 20 pages). All writing samples should be single-authored and include citations and references. The writing sample is intended to demonstrate the ability to construct a meaningful argument on an education-related topic and to cite research/literature to support one's views. A PowerPoint presentation is not acceptable.

Requirements for Advancement to Graduate Candidacy

Students who have completed matriculation and have achieved classified standing in the Ed.D. Program curriculum will advance to candidacy for the Ed.D. degree. Students advance to candidacy after completing a minimum of 9 units of letter-graded work that is acceptable to the Ed.D. Program and fulfilling other university requirements for advancement to candidacy as detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, and GPA requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Ed.D. Leadership Program Graduation Requirements

To be eligible for graduation, the candidate shall have completed all coursework and global out-of-country (or equivalent) requirements, pre-proposal/literature review, the dissertation proposal, IRB, and the doctoral dissertation. Students are required to complete the dissertation proposal in two attempts in order to proceed with the dissertation.

Dissertation Requirements

- The Ed.D. dissertation is expected to contribute to an improvement in education practice and/ or education policy in the context of a particular educational institution. It is expected that the dissertation will show evidence of originality, critical and independent thinking, appropriate form and organization, and a rationale for the examined research problem or question.
- The dissertation must meet all university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with assistance from two other members of the dissertation committee. The Dissertation Committee consists of three members, one who serves as the committee chair (or in some cases, two co-chairs can be identified). Two members of the dissertation committee must be tenured or tenure-track members of the San Jose State University faculty. The third member of the committee is expected to be employed at a local school or school district and have achieved the terminal degree (e.g., Ed.D., J.D., Ph.D.).
- All students must enroll in a total of 12 units of dissertation credit during the final year of the program: 6 units in the fall semester and 6 units in the spring semester of Year 3 of the program. Once the candidate has enrolled in 12 dissertation units, the maximum allowable, continuous enrollment must be maintained until the dissertation is approved and filed and the degree is awarded.
- All students are expected to produce a dissertation that consists of five chapters, namely Introduction, Literature Review, Methodology, Results/Analysis, and Conclusions/ Recommendations. This is typically followed by a References section and relevant appendices. Alternatives to the traditional dissertation format will be considered, with approval by the faculty advisor/dissertation committee, within accepted norms of research, scholarship, and creative activities. The Lurie College of Education uses APA style for research and the SJSU Graduate Studies division provides additional formatting/style guidelines for theses and dissertations. An exception to the traditional five-chapter dissertation will be made on a case by case basis.
- After completing the dissertation proposal defense and obtaining IRB approval, students carry out the research plan described in the approved proposal, collect and analyze data, and continue writing the dissertation. The Dissertation Committee Chair and committee members will guide the students to ensure their dissertation conveys scholarly work that results from an appropriate research study and contributes to the understanding and/or improvement of educational practice.
- All students are expected to submit drafts of their dissertation to their committee members in the appropriate word-processed form. The completed final draft also includes the Abstract, Copyright Page, Title Page, Acknowledgments, Table of Contents, List of Tables, List of Figures, References, and Appendices. The students submit the final draft manuscript to committee members for a final reading and approval. The final dissertation may take a variety of forms depending upon the type of research undertaken. The conventional five-chapter dissertation may be revised to reflect a specific design and purpose.
- Dissertation Examination: Every candidate for the Ed.D. degree must successfully pass a final oral examination based on the dissertation. At the final oral defense, the candidate will make a public presentation of his or her dissertation research. The final oral defense is conducted as an open forum led by the candidate and guided by the Committee Chair and the two other members of the Dissertation Committee. The purposes of this formal meeting are to (1) examine and assess the quality of the dissertation; (2) evaluate the ability of the student to present research; and (3) provide an opportunity to share the research with the campus community. Unanimous agreement of the Dissertation Committee is required for approval of the dissertation and recommendation that the Ed.D. degree be conferred on the candidate.

Doctorate Requirements (60 units)

Core Courses (48 units)

Educational Leadership and Education Policy (12 units)

- EDD 510 - Educational Leadership: Theory and Practice 3 *unit(s)*

- EDD 512 - Leadership, Complexity, and Systems Thinking 3 *unit(s)*
- EDD 515 - Leadership, Diversity, and Culture: Family, School and Community Connections 3 *unit(s)*
- EDD 535 - Education Policy, Resource Allocation and School Reform 3 *unit(s)*

Organizational Behavior and Adult Learning (9 units)

- EDD 511 - Leadership for Learner Centered Organizations 3 *unit(s)*
- EDD 520 - Organizational Behavior and Change in Education 3 *unit(s)*
- EDD 522 - Communication and Educational Leadership 3 *unit(s)*

Contexts for Educational Leadership (12 units)

- EDD 530 - Assessment, Testing and Evaluation: Contexts and Implications for School Reform 3 *unit(s)*
- EDD 536 - The Politics of Education and Finance of Schooling 3 *unit(s)*
- EDD 540 - Education and Leadership in Global Context: Globalization & Narrative Ethics 3 *unit(s)*
- EDD 585 - Field Experience: Global Context 3 *unit(s)* OR EDD 590 - Research Seminar and Colloquium in Educational Leadership 3 *unit(s)*

Research Methodology: Tools for the Scholar-Practitioner (15 units)

- EDD 501 - Quantitative Analysis for Educational Research 3 *unit(s)*
- EDD 502 - Qualitative Methods in Educational Research 3 *unit(s)*
- EDD 591A - Proseminar I: Introduction to Doctoral Studies in Educational Leadership 3 *unit(s)*
- EDD 591B - Proseminar II - Practitioner-Led Research 3 *unit(s)* (GWAR)
- EDD 591C - Professional Seminar III: Structuring & Writing a High Quality Dissertation 3 *unit(s)*
- International Out-of-Country Experience 0 *unit(s)*

Culminating Experience (12 units)

- EDD 598 - Dissertation Research Development 1-2 *unit(s)* (*Students take 1 unit of EDD 598 six times*)
- EDD 599 - Dissertation 3 *unit(s)* (*Students take EDD 599 for two semesters.*)
- Dissertation Defense

Total Units Required (60 units)

Satisfactory Academic Progress

All students are expected to make satisfactory progress in accordance with the Ed.D. cohort structure and program of study through the time of advancement to candidacy. The normal expectation is that students will attend and participate in all required program components. In the event that a lack of attendance/participation would cause a student to fail to maintain a grade point average of 3.0, the student would be notified and counseled regarding requirements for satisfactory progress toward the degree in the time specified by program faculty.

A student must earn a grade of "C" or better in all required classes in the doctoral program, with all "sub-C" grades considered as failure; those classes would have to be repeated, and students would have one additional chance to do so. Failure to achieve the "C" grade in two chances would result in a recommendation for administrative academic disqualification. All students are expected to achieve a grade point average of 3.0 or above in all semesters of coursework. In addition to the university requirements for minimal grade point average and academic disqualification,

the Ed.D. Program requires that all students achieve a minimum grade point average of 3.0 or above in every semester of coursework. A student who achieves less than a 3.0 GPA in a given semester will be required to attend a meeting with the Ed.D. Director, the student's advisor (if an advisor has been assigned), and the faculty member teaching the course (s) in which a grade below a "B" has been assigned. Possible outcomes of this meeting include (1) a recommendation for a remediation plan for the student, (2) academic probation in the Ed.D. Program with the recommendation of disqualification if achieved GPA falls below 3.0 in a subsequent semester, or (3) a recommendation that the student be immediately disqualified from taking further coursework in the doctoral program.

Additionally, satisfactory progress pertains to doctoral students' adherence to the high standards of professional ethics. Students must adhere to scholarly and ethical standards in all courses, fieldwork, and research endeavors. Such standards are defined by the faculty, the professional accrediting bodies, policies of the university and the CSU, and relevant statutes of federal, state, and local governments. Students may be placed on probation or disqualified based on unsatisfactory scholastic progress or failure to adhere to professional and ethical standards.

We note that, according to university policy, a student who falls below a 3.0 GPA in an academic term will be notified in writing that he/she has been placed on academic probation. When the student's overall GPA is below 3.0, failure to achieve a term GPA of 3.0 in any subsequent semester results in academic disqualification.

In all cases, a disqualified student will not be allowed to continue in the program, enroll in doctoral-level courses, or register in the doctoral program. The disqualification will be communicated to the student in writing through certified mail. A disqualified student will be permitted to apply for reinstatement into the Ed.D. Program; consideration of the student's application for reinstatement will occur along with consideration for all new applications into the program in a given year.

Students who need to make up assignments must work with the faculty member teaching a particular class, and it is up to each individual faculty member how best to negotiate missed assignments and/or requests for a grade of Incomplete. In the event that lack of attendance/participation causes a student to fail to maintain a GPA of 3.0, the student will be notified of academic probation and counseled regarding requirements for satisfactory progress toward the degree.

Any student may request a leave of absence from the Ed.D. Program for up to one year through a written request to the Ed.D. Director and a formal petition to the university. To be considered, the student should explain the reasons for the request and any mitigating circumstances involved. The request may be approved or denied by the Director in consultation with the Ed.D. Program faculty. If approved, the approval will stipulate the timeline and conditions or options for returning to the doctoral program. One possible option is for the student to join a later cohort and resume taking the classes that were missed.

Educational Leadership, EdD (Hybrid)

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Doctorate Requirements (60 units)
- Program Learning Outcomes

The hybrid Ed.D. Program in Educational Leadership at San José State University is dedicated to developing outstanding education leaders who are well prepared to meet the demands and challenges of schools, today and in the future. The program builds on the view that educational leaders serve in learner-centered systems in which inquiry, learning, equity and social justice, and human care are central concerns. The hybrid Ed.D. Program is designed so that it may be completed in nine semesters over three years. This time frame allows for the completion of all coursework, pre proposal/literature review, dissertation proposal, and completion of the dissertation. The hybrid program begins in Summer Year 1 with intensive five- and ten-week summer sessions that meet at least two days per week. Fall and spring semester classes are scheduled as hybrid classes and meet on evenings or weekends during the semester. The second summer involves an optional global component that includes a two-week educational and

cultural experience outside of the United States. It is anticipated that students will concurrently be working full time as they pursue their doctoral studies.

Additional information is available in the Educational Leadership (EdD) Program Office or website: www.sjsu.edu/edd.

Admissions Requirements

Candidates must meet all university and Ed.D. Program admission requirements. The university-level graduate application is separate from the application that is sent to the Ed.D. Program. Minimum requirements for the program include a master's degree from an accredited institution and a 3.0 grade point average (B or better) in the last 60 semester units completed. In exceptional cases, experience and service will be considered in lieu of the Master's degree requirement.

In addition to the university admissions requirements as outlined in this catalog, applicants must meet the Ed.D. Program requirements below.

- Three letters of recommendation attesting leadership ability and potential for success in a doctoral program. One of the letters should be from a school district employer indicating support for participation in the doctoral program. Recommendation forms are available on the Ed.D. Leadership Program webpage at www.sjsu.edu/edd. Recommendation letters should be submitted directly from the person writing the recommendation letter to edd-leadership@sjsu.edu.
- Current professional resume or curriculum vitae that includes leadership experience and/or leadership strengths as indicated through job experiences, administrative credentials, and/or other evidence of leadership capacity and practice. Resumes or vitae should not exceed 4 pages.
- A written statement of purpose that explains the reasons for pursuing doctoral studies in educational leadership. The statement should include relevant personal and professional history and background, some of the core commitments and principles that drive one's career goals, and challenges facing education and educational leadership in California, nationally, and globally. Statements should not exceed 3 pages, single-spaced.
- A recent writing sample (last 5 years) of an individually authored paper, research projects, or reports (maximum of 20 pages). All writing samples should be single-authored and include citations and references. The writing sample is intended to demonstrate the ability to construct a meaningful argument on an education-related topic and to cite research/literature to support one's views. A PowerPoint presentation is not acceptable.

Requirements for Advancement to Graduate Candidacy

Students who have completed matriculation and have achieved classified standing in the hybrid Ed.D. Program curriculum will advance to candidacy for the Ed.D. degree. Students advance to candidacy after completing a minimum of 9 units of letter-graded work that is acceptable to the hybrid Ed.D. Program and fulfilling other university requirements for advancement to candidacy as detailed in the Graduate Policies and Procedures. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, and GPA requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Ed.D. Leadership Program Graduation Requirements

To be eligible for graduation, the candidate shall have completed all coursework and global out-of-country (or equivalent) requirements, the dissertation proposal, IRB, and the doctoral dissertation. Students are required to complete the dissertation proposal in two attempts in order to proceed with the dissertation.

Dissertation Requirements

- The Ed.D. dissertation is expected to contribute to an improvement in education practice and/ or education policy in the context of a particular educational institution. It is expected that the dissertation will show evidence of originality, critical and independent thinking, appropriate form and organization, and a rationale for the examined research problem or question.
- The dissertation must meet all university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with assistance from two other members of the dissertation committee. The Dissertation Committee consists of three members, one who serves as the committee chair (or in some cases, two co-chairs can be identified). Two members of the dissertation committee must be tenured or tenure-track members of the San Jose State University faculty. The third member of the committee is expected to be an external reviewer employed at a local school or school district or higher education and have achieved the terminal degree (e.g., Ed.D., J.D., Ph.D.).
- All students must enroll in a total of 12 units of dissertation credit during the final year of the program: 6 units in the fall semester and 6 units in the spring semester of Year 3 of the program. Once the candidate has enrolled in 12 dissertation units, the maximum allowable, continuous enrollment must be maintained until the dissertation is approved and filed and the degree is awarded.
- All students are expected to produce a dissertation that consists of five chapters, namely Introduction, Literature Review, Methodology, Results/Analysis, and Conclusions/ Recommendations. This is typically followed by a References section and relevant appendices. Alternatives to the traditional dissertation format will be considered, with approval by the faculty advisor/dissertation committee, within accepted norms of research, scholarship, and creative activities. The Lurie College of Education uses APA style for research and the SJSU Graduate Studies division provides additional formatting/style guidelines for theses and dissertations. An exception to the traditional five-chapter dissertation will be made on a case by case basis.
- After completing the dissertation proposal defense and obtaining IRB approval, students carry out the research plan described in the approved proposal, collect and analyze data, and continue writing the dissertation. The Dissertation Committee Chair and committee members will guide the students to ensure their dissertation conveys scholarly work that results from an appropriate research study and contributes to the understanding and/or improvement of educational practice.
- All students are expected to submit drafts of their dissertation to their committee members in the appropriate word-processed form. The completed final draft also includes the Abstract, Copyright Page, Title Page, Acknowledgments, Table of Contents, List of Tables, List of Figures, References, and Appendices. The students submit the final draft manuscript to committee members for a final reading and approval. The final dissertation may take a variety of forms depending upon the type of research undertaken. The conventional five-chapter dissertation may be revised to reflect a specific design and purpose.
- Dissertation Examination: Every candidate for the Ed.D. degree must successfully pass a final oral examination based on the dissertation. At the final oral defense, the candidate will make a public presentation of his or her dissertation research. The final oral defense is conducted as an open forum led by the candidate and guided by the Committee Chair and the two other members of the Dissertation Committee. The purposes of this formal meeting are to (1) examine and assess the quality of the dissertation; (2) evaluate the ability of the student to present research; and (3) provide an opportunity to share the research with the campus community. Unanimous agreement of the Dissertation Committee is required for approval of the dissertation and recommendation that the Ed.D. degree be conferred on the candidate.

Hybrid Doctorate Requirements (60 units)

Core Courses (48 units)

Educational Leadership and Education Policy (12 units)

- EDD 510 - Educational Leadership: Theory and Practice 3 *unit(s)*
- EDD 512 - Leadership, Complexity, and Systems Thinking 3 *unit(s)*
- EDD 515 - Leadership, Diversity, and Culture: Family, School and Community Connections 3 *unit(s)*
- EDD 535 - Education Policy, Resource Allocation and School Reform 3 *unit(s)*

Organizational Behavior and Adult Learning (9 units)

- EDD 511 - Leadership for Learner Centered Organizations 3 *unit(s)*
- EDD 520 - Organizational Behavior and Change in Education 3 *unit(s)*
- EDD 522 - Communication and Educational Leadership 3 *unit(s)*

Contexts for Educational Leadership (12 units)

- EDD 530 - Assessment, Testing and Evaluation: Contexts and Implications for School Reform 3 *unit(s)*
- EDD 536 - The Politics of Education and Finance of Schooling 3 *unit(s)*
- EDD 540 - Education and Leadership in Global Context: Globalization & Narrative Ethics 3 *unit(s)*
- EDD 585 - Field Experience: Global Context 3 *unit(s)* OR EDD 590 - Research Seminar and Colloquium in Educational Leadership 3 *unit(s)*

Research Methodology: Tools for the Scholar-Practitioner (15 units)

- EDD 501 - Quantitative Analysis for Educational Research 3 *unit(s)*
- EDD 502 - Qualitative Methods in Educational Research 3 *unit(s)*
- EDD 591A - Proseminar I: Introduction to Doctoral Studies in Educational Leadership 3 *unit(s)*
- EDD 591B - Proseminar II - Practitioner-Led Research 3 *unit(s)*
- EDD 591C - Professional Seminar III: Structuring & Writing a High Quality Dissertation 3 *unit(s)*
 - *International Out-of-Country Experience 0 unit(s)*

Culminating Experience (12 units)

- EDD 598 - Dissertation Research Development 1-2 *unit(s)* (*Students take 1 unit of EDD 598 six times*)
- EDD 599 - Dissertation 3 *unit(s)* (*Students take EDD 599 for two semesters.*)
- Dissertation Defense

Total Units Required (60 units)

Satisfactory Academic Progress

All students are expected to make satisfactory progress in accordance with the Ed.D. cohort structure and program of study through the time of advancement to candidacy. The normal expectation is that students will attend and

participate in all required program components. In the event that a lack of attendance/participation would cause a student to fail to maintain a grade point average of 3.0, the student would be notified and counseled regarding requirements for satisfactory progress toward the degree in the time specified by program faculty.

A student must earn a grade of "C" or better in all required classes in the doctoral program, with all "sub-C" grades considered as failure; those classes would have to be repeated, and students would have one additional chance to do so. Failure to achieve the "C" grade in two chances would result in a recommendation for administrative academic disqualification. All students are expected to achieve a grade point average of 3.0 or above in all semesters of coursework. In addition to the university requirements for minimal grade point average and academic disqualification, the Ed.D. Program requires that all students achieve a minimum grade point average of 3.0 or above in every semester of coursework. A student who achieves less than a 3.0 GPA in a given semester will be required to attend a meeting with the Ed.D. Director, the student's advisor (if an advisor has been assigned), and the faculty member teaching the course (s) in which a grade below a "B" has been assigned. Possible outcomes of this meeting include (1) a recommendation for a remediation plan for the student, (2) academic probation in the Ed.D. Program with the recommendation of disqualification if achieved GPA falls below 3.0 in a subsequent semester, or (3) a recommendation that the student be immediately disqualified from taking further coursework in the doctoral program.

Additionally, satisfactory progress pertains to doctoral students' adherence to the high standards of professional ethics. Students must adhere to scholarly and ethical standards in all courses, fieldwork, and research endeavors. Such standards are defined by the faculty, the professional accrediting bodies, policies of the university and the CSU, and relevant statutes of federal, state, and local governments. Students may be placed on probation or disqualified based on unsatisfactory scholastic progress or failure to adhere to professional and ethical standards.

We note that, according to university policy, a student who falls below a 3.0 GPA in an academic term will be notified in writing that he/she has been placed on academic probation. When the student's overall GPA is below 3.0, failure to achieve a term GPA of 3.0 in any subsequent semester results in academic disqualification.

In all cases, a disqualified student will not be allowed to continue in the program, enroll in doctoral-level courses, or register in the doctoral program. The disqualification will be communicated to the student in writing through certified mail. A disqualified student will be permitted to apply for reinstatement into the Ed.D. Program; consideration of the student's application for reinstatement will occur along with consideration for all new applications into the program in a given year.

Students who need to make up assignments must work with the faculty member teaching a particular class, and it is up to each individual faculty member how best to negotiate missed assignments and/or requests for a grade of Incomplete. In the event that lack of attendance/participation causes a student to fail to maintain a GPA of 3.0, the student will be notified of academic probation and counseled regarding requirements for satisfactory progress toward the degree.

Any student may request a leave of absence from the Ed.D. Program for up to one year through a written request to the Ed.D. Director and a formal petition to the university. To be considered, the student should explain the reasons for the request and any mitigating circumstances involved. The request may be approved or denied by the Director in consultation with the Ed.D. Program faculty. If approved, the approval will stipulate the timeline and conditions or options for returning to the doctoral program. One possible option is for the student to join a later cohort and resume taking the classes that were missed.

Advanced Certificate(s)

Higher Education Teaching Certificate

The Higher Education Teaching certificate program provides graduate-level coursework and classroom experience to prepare current and future higher education instructors. This certificate program is aimed at developing postsecondary faculty's culturally-sustaining and responsive pedagogical knowledge grounded in social justice,

equity, and inclusion. The program offers a well rounded experience that integrates theory and teaching practicum. The program is offered in a hybrid modality, with the courses taught online and the practicum activities taking place remotely and in person.

Admissions Requirements

- MA/MAS Degree from a regionally accredited institution or currently enrolled in an MA/MS program
- Minimum GPA of 2.5, based on a 4.0 scale
- Candidates must also meet all SJSU admissions requirements
- Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on GAPE's Graduate Program Test Requirements webpage. For TOEFL requirements, see the admissions requirements section.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Required Courses (9 units)

- EDLD 212C - Diversity, Equity, and Social Justice in Higher Education 3 *unit(s)*
- EDLD 250 - Emancipatory Pedagogy in Higher Education 3 *unit(s)*
- EDLD 251 - Higher Education Teaching Practicum 3 *unit(s)*

Total Units Required (9 units)

Theory, Knowledge and Practice about Autism Spectrum Disorders Certificate (Not Accepting Students)

The Theory, Knowledge and Practice about Autism Spectrum Disorders Certificate is offered by the Department of Special Education. Admission into the program requires department consent.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

Specialized Coursework (9 units)

- EDSE 218A - ASD: Moderate to Severe Disabilities 3 *unit(s)*
- EDSE 218B - ASD: Mild to Moderate Disabilities 3 *unit(s)*
- EDSE 218C - ASD: Collaboration and Implementation of Best Practices 3 *unit(s)*

Total Units Required (9 units)

Credential(s)

Credentials are primarily granted by the California Commission on Teaching Credentialing. This excludes the Credential in Spanish Language Counseling.

Education Specialist Preliminary Teaching Credential: Early Childhood Special Education

All candidates participating in the Early Childhood Special Education Credential Program, offered by the Department of Special Education, are prepared to provide instruction and special education support to students birth to kindergarten, who are eligible for early intervention special education and related services related to one or more of the following disabilities: autism, emotional disturbance, intellectual disability, orthopedic impairment, other health impairment, specific learning disability, traumatic brain injury and multiple disabilities including developmental delay and a disabling medical condition. Candidates must meet Teacher Performance Expectations set forth by the California Commission on Teacher Credentialing.

Preliminary Credential Requirements (39 units)

Core Courses (24 units)

- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S)
- EDSE 192B - All Learners: An Introduction to Disabilities 1 *unit(s)*
- EDSE 192C - Inclusive Strategies for Educating Students with Disabilities 1 *unit(s)*
- EDSE 192D - Introduction to Special Education Policy and Law 1 *unit(s)*
- EDSE 218D - Teaching Students with Autism Spectrum Disorders 3 *unit(s)*
- EDSE 224 - Methods for Emergent Bilinguals with Disabilities 1-3 *unit(s)*
- EDSE 228A - Topics in Collaboration and Transition 3 *unit(s)*
- EDSE 234 - Early Field Experiences in Special Education 1-3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*
- EDSE 279 - Positive Behavior Support 3 *unit(s)*

Specialization (15 units)

- EDSE 104 - Early Intervention for Children with Disabilities 3 *unit(s)*
- EDSE 108 - Assessing Young Children 3 *unit(s)*
- EDSE 154 - Advanced Fieldwork in ESN and ECSE 6 *unit(s)*
- EDSE 221 - Methods for Young Children with Disabilities 3 *unit(s)*

Total Units Required (39 units)

Optional Internship

Candidates enrolled in this option are able to complete the advanced fieldwork requirement of the credential program as an intern, which allows them employment as a special education teacher while taking courses at SJSU. Visit the Intern Program page of the department website for more information regarding this option.

Education Specialist Preliminary Teaching Credential: Extensive Support Needs

All candidates participating in the Education Specialist Extensive Support Needs Credential Program, offered by the Department of Special Education, are prepared to provide instruction and special education support to students in

transitional kindergarten, kindergarten, grades 1-12 through age 22, and classes organized primarily for adults with extensive support needs related to one or more of the following disabilities: autism, deafblind, emotional disturbance, intellectual disability, multiple disabilities, orthopedic impairment, other health impairment, specific learning disability, and traumatic brain injury. Candidates must meet Teacher Performance Expectations set forth by the California Commission on Teacher Credentialing.

Preliminary Credential Requirements (42 units)

Core Courses (24 units)

- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S)
- EDSE 192B - All Learners: An Introduction to Disabilities 1 *unit(s)*
- EDSE 192C - Inclusive Strategies for Educating Students with Disabilities 1 *unit(s)*
- EDSE 192D - Introduction to Special Education Policy and Law 1 *unit(s)*
- EDSE 218D - Teaching Students with Autism Spectrum Disorders 3 *unit(s)*
- EDSE 224 - Methods for Emergent Bilinguals with Disabilities 1-3 *unit(s)*
- EDSE 228A - Topics in Collaboration and Transition 3 *unit(s)*
- EDSE 234 - Early Field Experiences in Special Education 1-3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*
- EDSE 279 - Positive Behavior Support 3 *unit(s)*

Specialization(18 units)

- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*
- EDSE 154 - Advanced Fieldwork in ESN and ECSE 6 *unit(s)*
- EDSE 213A - Methods for Students with Extensive Support Needs 3 *unit(s)*
- EDSE 215 - Assessing Students with Disabilities 3 *unit(s)*
- EDSE 216A - Literacy Instruction: Students with Disabilities 3 *unit(s)*

Total Units Required (42 units)

Optional Internship

Candidates enrolled in this option may complete the advanced fieldwork requirement of the credential program as an intern, which allows them employment as a special education teacher while taking courses at SJSU. Visit the Intern Program page of the department website for more information regarding this option.

Education Specialist Preliminary Teaching Credential: Mild/Moderate Support Needs

All candidates participating in the Education Specialist Mild-Moderate Support Needs Credential Program, offered by the Department of Special Education, are prepared to provide instruction and special education support to students in transitional kindergarten, kindergarten, grades 1-12 through age 22, and classes organized primarily for adults with mild to moderate support needs related to one or more of the following disabilities: autism, emotional disturbance, intellectual disabilities, multiple disabilities, orthopedic impairment, other health impairment, specific learning disability, and traumatic brain injury. Candidates must meet Teacher Performance Expectations set forth by the California Commission on Teacher Credentialing.

Preliminary Credential Requirements (42 units)

Core Courses (24 units)

- EDSE 102 - Intro to Language Development and Disability 3 unit(s)
- EDSE 192B - All Learners: An Introduction to Disabilities 1 unit(s)
- EDSE 192C - Inclusive Strategies for Educating Students with Disabilities 1 unit(s)
- EDSE 192D - Introduction to Special Education Policy and Law 1 unit(s)
- EDSE 218D - Teaching Students with Autism Spectrum Disorders 3 unit(s)
- EDSE 224 - Methods for Emergent Bilinguals with Disabilities 1-3 unit(s)
- EDSE 228A - Topics in Collaboration and Transition 3 unit(s)
- EDSE 234 - Early Field Experiences in Special Education 1-3 unit(s)
- EDSE 241 - Applying Assistive & Instructional Technology 3 unit(s)
- EDSE 279 - Positive Behavior Support 3 unit(s)

Specialization (18 units)

- EDEL 108D - Curriculum: Mathematics 3 unit(s)
- EDSE 215 - Assessing Students with Disabilities 3 unit(s)
- EDSE 216A - Literacy Instruction: Students with Disabilities 3 unit(s)
- EDSE 217A - Advanced Fieldwork in Mild Moderate Support Needs 6 unit(s) *(Plus 50 hours of fieldwork in a general education setting)*
- EDSE 230A - Inclusive Pedagogy for Students with M/MSN 3 unit(s)

Total Units Required (42 units)

Optional Internship

Candidates enrolled in this option may complete the advanced fieldwork requirement of the credential program as an intern, which allows them employment as a special education teacher while taking courses at SJSU. Visit the Intern Program page of the department website for more information regarding this option.

Multiple Subject Credential

The Credential in Multiple Subject Credential is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Multiple Subject Credential Requirements (46 units)

Core Courses

- EDEL 108A - Curriculum: Reading/Language Arts 3 unit(s)
- EDEL 108B - Curriculum: Science 3 unit(s)

- EDEL 108C - Curriculum: Social Studies 3 *unit(s)*
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*
- EDEL 143A - Beginning Student-Teaching (Phase I) 1-6 *unit(s)* (4 units required)
- EDEL 143B - Advanced Student-Teaching (Phase II) 1-10 *unit(s)* (10 units required)
- EDEL 143P - Introduction to Student Teaching 1 *unit(s)*
- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- EDTE 297C - CalTPA Support 1 *unit(s)* (Take a total of 2 units of EDTE 297C)

Complete 2 units of one of the courses:

- EDTE 297B - Advanced Issues in Bilingual Education 1-3 *unit(s)*
- EDTE 297F - Field Support 1 *unit(s)*

Total Units Required (46 units)

Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in order to be recommended for a credential.

PK-3 Early Childhood Education (PK-3 ECE) Specialist Instruction Credential

The PK-3 ECE Specialist Instruction Credential Program is offered by the Department of Teacher Education in collaboration with the Department of Child and Adolescent Development and the Department of Special Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Core Courses (43 units)

- CHAD 261 - Seminar in Early Childhood Curriculum 3 *unit(s)*
- CHAD 272 - Seminar in Early Childhood Development 3 *unit(s)*
- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*
- EDEL 143A - Beginning Student-Teaching (Phase I) 1-6 *unit(s)* (4 units required)
- EDEL 143B - Advanced Student-Teaching (Phase II) 1-10 *unit(s)* (10 units required)
- EDSE 104 - Early Intervention for Children with Disabilities 3 *unit(s)*
- EDSE 221 - Methods for Young Children with Disabilities 3 *unit(s)*
- EDSE 269 - Supportive Learning Environments for Young Children 3 *unit(s)*
- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 297C - CalTPA Support 1 *unit(s)* (Students complete this course twice.)

Total Units Required (43 units)

Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in order to be recommended for a credential.

Pupil Personnel Services (PPS) School Counseling Credential

The Pupil Personnel Services (PPS) School Counseling Credential (formerly K-12 School Counseling Credential), offered by the Department of Counselor Education, is a 54-unit program that qualifies individuals to be recommended to CTC to apply for a clear PPS School Counseling Credential to work as school counselors in California K-12 public schools.

Note: A master's degree in Counseling or a closely related field is required to be eligible to apply for a clear PPS School Counseling Credential through the California Commission on Teacher Credentialing (CTC).

Therefore, applicants who have not already earned a master's degree in Counseling or a related field need to apply via the Master of Arts (MA) degree in Counseling and Guidance program option. The MA in Counseling and Guidance with a PPS School Counseling Credential (MA + PPS School Counseling Credential) program option requires the completion of a minimum of 60 units.

Individuals admitted into the PPS School Counseling Credential program are eligible to apply for a **PPS School Counseling Internship Credential** (valid for up to two years) if they are offered a school counseling position by a local school district before completing the program requirements. To be eligible, a program candidate must have completed a minimum of 15 units (EDCO 215, EDCO 218, EDCO 232, EDCO 248, and EDCO 294) with a 3.0 GPA or higher and met the Basic Skills Requirement (BSR).

A Child Welfare and Attendance (CWA) Authorization, which focuses on issues related to truancy and dropout prevention, can also be obtained.

Please see department website for most current program offerings and requirements:
<https://www.sjsu.edu/counselored/>

PPS School Counseling Credential Requirements (54 units)

Foundational Core Courses (24 units)

- EDCO 215 - Introduction to Counseling and Guidance 3 *unit(s)* (GWAR)
- EDCO 218 - Counseling Process & Techniques 3 *unit(s)*
- EDCO 227 - School-Family-Community Collaboration 3 *unit(s)*
- EDCO 232 - Law & Ethics in Counseling 3 *unit(s)*
- EDCO 248 - Dynamics of Behavior and Development 3 *unit(s)*
- EDCO 266 - Education and Career Planning 3 *unit(s)*
- EDCO 294 - Practicum in Self-Development 3 *unit(s)*
- EDCO 244 - Cultural Perspectives in Counseling 3 *unit(s)* OR EDCO 280 - Multicultural Counseling 3 *unit(s)*

Advanced Professional Development Courses (21 units)

To be completed in the order listed below:

- EDCO 221 - Research in Counselor Education 3 *unit(s)*
- EDCO 279 - Advanced Group Process Theory and Practice 3 *unit(s)*

- EDCO 283 - Advanced Educational Assessment 3 *unit(s)*
- EDCO 285 - Trauma Counseling & Crisis Intervention 3 *unit(s)*
- EDCO 287 - Comprehensive School Counseling Analysis 3 *unit(s)*
- EDCO 288 - Seminar in Counseling Theory and Practice 3 *unit(s)* (GWAR)
- EDCO 267 - Practicum in Lifespan and Career Development 1-3 *unit(s)* (3 *units required*) OR EDCO 268 - Lifespan Development (3 *unit(s)*)

Supervised Counseling Experience (9 units)

- EDCO 292 - Supervised Experience in Counseling 3-6 *unit(s)* (9 *units required*)
Complete 800 hours of supervised counseling fieldwork experience - 200 hours for every 3 units of EDCO 292. A minimum of 200 hours must be completed within each of two public K-12 school levels.

Fieldwork experience can commence after five Foundational Core Courses (EDCO 215, EDCO 218, EDCO 232, EDCO 248, and EDCO 294) and 100 hours of K-12 practicum experience are completed with a 3.0 GPA or higher. Practicum experience is typically completed within EDCO 218 (35 hours) and EDCO 294 (65 hours).

Total Units Required (54 units)

Completion of coursework requires a minimum grade of C or higher in each course and a minimum overall GPA of 3.0.

Single Subject Credential - Art

The Single Subject Credential in Art is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Credential Requirements (38 units)

Core Courses (18 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (3 units)

- ARED 238 - Principles of Art Education 3 *unit(s)*

Student Teaching (15 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)*
- ARED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- ARED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*

Content Seminar (1 unit)

- ARED 365 - Field Experience Seminar in Art Education 1 *unit(s)*

CalTPA Seminar (1 unit)

- EDTE 297C - CalTPA Support 1 *unit(s)*

Total Units Required (38 units)

Elective courses must be selected in consultation with the Graduate Advisor.

Upon completion of the credential requirements, students must have achieved a SJSU Cumulative grade point average of 3.0 in order to be recommended for a credential.

Single Subject Credential - English

The Single Subject Credential in English is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Credential Requirements (40 units)

Core Courses (18 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (4 units)

- ENED 353 - Methods of Teaching English 4 *unit(s)*

Student Teaching (15 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)*
- ENED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- EDSC 184Z - Student Teaching III 1-6 *unit(s)*

Content Seminar (2 units)

- ENED 365 - Seminar in English Education 2 *unit(s)*

CalTPA Seminar (1 unit)

- EDTE 297C - CalTPA Support 1 *unit(s)*

Total Units Required (40 units)

Elective courses must be selected in consultation with the Graduate Advisor.

Upon completion of the credential requirements, students must have achieved a SJSU Cumulative grade point average of 3.0 in order to be recommended for a credential.

Single Subject Credential - Mathematics

The Single Subject Credential in Mathematics is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Credential Requirements (38 units)

Core Courses (18 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (3 units)

- MTED 394 - Secondary Mathematics Methods 3 *unit(s)*

Student Teaching (15 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)*
- MTED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- MTED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*

Content Seminar (1 units)

- MTED 184S - Math Education Phase II Seminar 1 *unit(s)*

CalTPA Seminar (1 unit)

- EDTE 297C - CalTPA Support 1 *unit(s)*

Total Units Required (38 units)

Elective courses must be selected in consultation with the Graduate Advisor.

Upon completion of the credential requirements, students must have achieved a SJSU Cumulative grade point average of 3.0 in order to be recommended for a credential.

Single Subject Credential - Music

The Single Subject Credential in Music is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Credential Requirements (38 units)

Core Courses (18 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (4 units)

- MUED 370A - Methodology for Music Educators: Elementary K-8 2 *unit(s)*
- MUED 370B - Methodology for Music Educators: Secondary 2 *unit(s)*

Student Teaching (15 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)*
- MUED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- MUED 184Z - Student Teaching III-Classroom Teaching 4 *unit(s)*

CalTPA Seminar (1 unit)

- EDTE 297C - CalTPA Support 1 *unit(s)*

Total Units Required (38 units)

Elective courses must be selected in consultation with the Graduate Advisor.

Upon completion of the credential requirements, students must have achieved a SJSU Cumulative grade point average of 3.0 in order to be recommended for a credential.

Single Subject Credential - Physical Education

The Single Subject Credential in Physical Education is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Credential Requirements (37 units)

Core Courses (18 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (3 units)

- KNED 339 - Instructional Materials and Procedures in Physical Education 3 *unit(s)*

Student Teaching (15 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)*

- KNED 184Y - Student Teaching II: Classroom Teaching 4 *unit(s)*
- KNED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*

CalTPA Seminar (1 unit)

- EDTE 297C - CalTPA Support 1 *unit(s)*

Total Units Required (37 units)

Elective courses must be selected in consultation with the Graduate Advisor.

Upon completion of the credential requirements, students must have achieved a SJSU Cumulative grade point average of 3.0 in order to be recommended for a credential.

Single Subject Credential - Science

The Single Subject Credential in Science is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Credential Requirements (39 units)

Core Courses (18 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (3 units)

- SCED 273 - Secondary School Science 3 *unit(s)*

Student Teaching (15 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)*
- SCED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- SCED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*

Content Seminar (2 units)

- SCED 375 - Colloquium in Science Education 2 *unit(s)*

CalTPA Seminar (1 unit)

- EDTE 297C - CalTPA Support 1 *unit(s)*

Total Units Required (39 units)

Elective courses must be selected in consultation with the Graduate Advisor.

Upon completion of the credential requirements, students must have achieved a SJSU Cumulative grade point average of 3.0 in order to be recommended for a credential.

Single Subject Credential - Social Science

The Single Subject Credential in Social Science is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Credential Requirements (37 units)

Core Courses (18 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (3 units)

- SSED 378 - Social Science Methods 3 *unit(s)*

Student Teaching (15 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)* (GWAR)
- SSED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- SSED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*

CalTPA Seminar (1 unit)

- EDTE 297C - CalTPA Support 1 *unit(s)*

Total Units Required (37 units)

Elective courses must be selected in consultation with the Graduate Advisor.

Upon completion of the credential requirements, students must have achieved a SJSU Cumulative grade point average of 3.0 in order to be recommended for a credential.

Single Subject Credential - World Languages

The Single Subject Credential in World Languages is offered by the Department of Teacher Education.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The requirement is satisfied with EDTE 208 in this program.

Credential Requirements (38 units)

Core Courses (18 units)

- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (3 units)

- FLED 380 - Teaching Foreign Languages 3 *unit(s)*

Student Teaching (15 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)*
- FLED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- FLED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*

Content Seminar (1 units)

- FLED 285 - Student Teaching Seminar In Foreign Language Education 1 *unit(s)*

CalTPA Seminar (1 unit)

- EDTE 297C - CalTPA Support 1 *unit(s)*

Total Units Required (38 units)

Elective courses must be selected in consultation with the Graduate Advisor.

Upon completion of the credential requirements, students must have achieved a SJSU Cumulative grade point average of 3.0 in order to be recommended for a credential.

Teacher Librarian Credential

The Teacher Librarian Credential program, offered by the School of Information, will prepare you for the next step in your teaching career as a library media specialist. A California teaching credential and English Learner Authorization are prerequisites to the Teacher Librarian Services Credential.

Specialized Skills for K - 12 Careers

Graduates of the Teacher Librarian Services Credential program in the SJSU School of Information will emerge with a specialization in the functions and skills necessary for employment in K - 12 schools including collaboration, technology leadership, and program administration.

As a teacher librarian, you'll be a teacher, a librarian, and an instructional partner.

Credential + MLIS Degree

Students in the Teacher Librarian program can pursue both their Teacher Librarian Services Credential and Library and Information Science, MLIS degree! Teacher librarianship is one of the exciting career pathways students can follow within the MLIS program, which is fully accredited by the American Library Association.

Learn More

- Sign up for future student emails.
- Download the California Teacher Librarian Services Credential brochure.
- Attend an online open house or watch a recording.
- Contact Jonathan Hunt, Teacher Librarian program coordinator.
- Read the Gainful Employment Disclosure.

Approved Course Work

The Teacher Librarian program course work meets the requirements for the California Teacher Librarian Services Credential. If you live in a state other than California, please check to see if the course work is approved by your home state before undertaking this program.

Required Course Work for the TL Credential

Core Courses:

- INFO 200 - Information Communities 3 *unit(s)*
- INFO 202 - Information Retrieval System Design 3 *unit(s)*
- INFO 203 - Online Learning: Tools and Strategies 1 *unit(s)*
- INFO 204 - Information Professions 3 *unit(s)*

Program Curriculum and Technology:

- INFO 233 - School Library Media Centers 3 *unit(s)*
- INFO 250 - Design and Implementation of Instructional Strategies for Information Professionals 3 *unit(s)*
- INFO 285 - Applied Research Methods 1-4 *unit(s)*

Information Services and Materials:

- INFO 237 - School Library Media Materials 3 *unit(s)*
- INFO 248 - Beginning Cataloging and Classification 3 *unit(s)*
- INFO 266 - Collection Management 3 *unit(s)*

Capstone Course:

- INFO 295 - School Library Field Work 3 *unit(s)* (required for ALL Teacher Librarian program students)

Additional Course Work for the MLIS Degree

To complete the required 43 units of course work for the MLIS degree, students add four more courses to the 31 units of required course work for the Teacher Librarian Services Credential, nine more elective units and INFO 298 - Advanced Topics in Library and Information Science (e-Portfolio) or INFO 299 - Thesis.

Recommended Elective Courses for the MLIS in support of Teacher Librarianship:

- INFO 210 - Reference and Information Services 1-3 *unit(s)*
- INFO 240 - Information Technology Tools and Applications 3 *unit(s)*
- INFO 241 - Automated Library Systems 1-3 *unit(s)*
- INFO 246 - Information Technology Tools and Applications - Advanced 1-3 *unit(s)*
- INFO 260A - Programming and Services for Children Ages 0-8 3 *unit(s)*
- INFO 261A - Programming and Services for Young Adults Ages 9-18 3 *unit(s)*
- INFO 267 - Services to Youth 1-9 *unit(s)*
- INFO 275 - Library Services for Racially and Ethnically Diverse Communities 3 *unit(s)*
- INFO 281 - Seminar in Contemporary Issues 1-3 *unit(s)*
- INFO 282 - Seminar in Library Management 1-3 *unit(s)*
- INFO 283 - Marketing of Information Products and Services 1-3 *unit(s)*
- INFO 286 - Interpersonal Communication Skills for Librarians 1-3 *unit(s)*
- INFO 287 - Seminar in Information Science 1-3 *unit(s)*
(*Topics: STEM in Libraries; Innovation and Participatory Practice in Libraries (to include Maker Spaces)*)

Contact

Jonathan Hunt

Teacher Librarian Program Coordinator
jonathan.hunt@sjsu.edu

Added Authorization(s)

Added Authorizations are granted by the California Commission on Teaching Credentialing and extend special authorization to specific audiences.

Bilingual Authorization in Spanish

The Bilingual Authorization in Spanish, offered by the Teacher Education Department, prepares both pre-credential and post-credential candidates to serve in dual immersion or bilingual school settings by developing pedagogy, practice and the ability to identify linguistic assets and potential for students, as well as empowering candidates to be changemakers in their own plurilingual context. The Bilingual Authorization in Asian languages is possible through the CSU Asian Language Consortium.

Teacher candidates in the Multiple Subject, PK-3 ECE Specialist Instruction, or Single Subject Credential program may complete the Bilingual Authorization in Spanish by gaining admission to the Critical Bilingual Authorization Program (CBAP), completing the credential requirements for the Multiple Subject, PK-3 or Single Subject Credential, and completing the alternative and additional courses as detailed below.

- CBAP admission requirements include submitting a second Statement of Purpose, which must be written in Spanish. This second essay is not a translation of the first, but it may have overlapping content. The statement should explain one's interest in bilingual education.
- CBAP applicants will participate in an interview conducted in Spanish to determine oral proficiency, grammatic dispositions, and alignment with program goals.
- Upon program completion, CBAP candidates also need to have passed the state test, Languages Other Than English (LOTE) subtest 3 or equivalent, in order to be eligible for the associated bilingual authorization. Alternate options include a BA in Spanish or a degree from a Spanish speaking country. Based on availability due to cohort size, candidates may opt to pursue a portfolio assessment option to satisfy the language proficiency requirement.

Contact

Professor Eduardo R. Muñoz-Muñoz, Ph.D.
Coordinator, Critical Bilingual Authorization Program
email: eduardo.munoz-munoz@sjsu.edu

Authorization Requirements

Completion of the following:

- Critical Bilingual Authorization Program (CBAP);
- Language proficiency test, CSET LOTE 3;
- Requirements for the Multiple Subject, PK-3 ECE Specialist Instruction Credential, or Single Subject Credential programs; and
- Alternative and additional courses as detailed below.

Alternative Courses

- CBAP teacher candidates will enroll in EDTE 208B instead of EDTE 208 for their credential coursework.
- CBAP candidates will also be placed in the bilingual section of EDTE 262, and for students in the Multiple Subject or PK-3 Credential Program, EDEL 108A, EDEL 143A, and EDEL 143B.

Additional Courses (2 units)

- EDTE 297B - Advanced Issues in Bilingual Education *1 unit taken during each of their two student teaching semesters*

Total Units Required (2 units)

Child Welfare and Attendance (CWA) Authorization

This authorization is offered by the Department of Counselor Education. The requirements for the Child Welfare and Attendance (CWA) Authorization can be met by completing all requirements for the Pupil Personnel Services (PPS) School Counseling Credential plus an additional section of EDCO 292 - Supervised Experience in Counseling where candidates complete a minimum of 150 hours of field experience, under the supervision of a Pupil Personnel Services (PPS) Credential holder. A minimum of 90 hours are to be completed in a school setting in direct contact with pupils. A minimum of 30 hours are to be completed in interdisciplinary experiences in a setting that is outside the field of education, such as law enforcement, juvenile justice, child health and welfare, mental health, social services, child protective services and community based organizations. The remaining 30 hours can be at the discretion of the EDCO 292 University Supervisor.

Authorization Requirements

- fulfill all requirements for the Pupil Personnel Services (PPS) School Counseling Credential
- 150 hours of Supervised Experience in Counseling (EDCO 292) that meet the CWA Authorization requirements stated above.

Please see department website for most current program offerings and requirements:
<https://www.sjsu.edu/counselored/>

Early Childhood Special Education Added Authorization (Not Accepting Students)

(This program is undergoing a revision and is on hold until further guidance is issued from CTC.)

The Added Authorization in Early Childhood Special Education, offered by the Department of Special Education, is available to individuals who hold a Clear Education Specialist Credential. Completion of this authorization extends special education teaching authorization to students with disabilities between the ages of birth and pre-Kinder.

Credential Requirements (24 units)

Specialized Courses (24 units)

- EDSE 104 - Early Intervention for Children with Disabilities 3 *unit(s)*
- EDSE 108 - Assessing Young Children 3 *unit(s)*
- EDSE 154 - Advanced Fieldwork in ESN and ECSE 6 *unit(s)*
- EDSE 218A - ASD: Moderate to Severe Disabilities 3 *unit(s)*
- EDSE 221 - Methods for Young Children with Disabilities 3 *unit(s)*
- EDSE 235A - Movement, Mobility, Sensory and Health 3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*

Total Units Required (24 units)

Introductory Computer Science Supplementary Authorization

The Introductory Computer Science Supplementary Authorization program at SJSU focuses on providing the computer science knowledge that allows teaching students to engage fully and democratically in a technology rich society. With a parallel engagement in equity/justice, technological skills, and pedagogy, this supplementary authorization helps students to:

- Explore big issues of equity and social impacts of CS
- Learn core CS practices, theories, tools, and skills
- Gain programming experience
- Learn how to critique, revise (existing) and design lessons and CS curricula

The Introductory Computer Science Supplementary Authorization

- can be added to a Single Subject teaching credential and authorizes the holder to teach the supplementary subject matter content typically included in curriculum guidelines and textbooks for study in grades 9 and below.
- can be added to a Multiple Subject Teaching credential and authorizes the holder to teach departmentalized classes related to the supplementary in grades 9 and below.

Introductory Authorization Requirements (10 units)

- EDTE 193 - Introduction to Emancipatory Approaches to Computing 1 *unit(s)*
- EDTE 194 - Computer Practice and Programming 3 *unit(s)*
- EDTE 195 - Connecting Communities Through Computational Thinking and Computing Systems 3 *unit(s)*
- EDTE 197 - Computer Science Education: Pedagogical Practices for Community Impact 3 *unit(s)*

Total Units Required (10 units)

Pupil Personnel Services (PPS) School Counseling Internship Added Authorization

This program is offered by the Department of Counselor Education. To be eligible to be recommended to the California Commission on Teacher Credentialing (CTC) for a PPS School Counseling Internship, a PPS Credential candidate must have:

1. Completed a minimum of 15 units within the program (EDCO 215, EDCO 218, EDCO 232, EDCO 244, and EDCO 294) with a GPA of 3.0 or higher,

2. 100 hours of K-12 practicum experience [typically completed through EDCO 215 (35 hours) and EDCO 294 (65 hours)],
3. Met the Basic Skills Requirement (BSR), and
4. Been offered a school counseling position by a public school/district.

Credential Requirements

Required Courses (12-21 units)

A PPS Internship Credential is valid for up to 2 years and a candidate must register in EDCO 292 during every semester (fall and spring) they are employed under the PPS Internship Credential.

- EDCO 215 - Introduction to Counseling and Guidance 3 *unit(s)*
- EDCO 232 - Law & Ethics in Counseling 3 *unit(s)*
- EDCO 244 - Cultural Perspectives in Counseling 3 *unit(s)*
- EDCO 292 - Supervised Experience in Counseling 3-6 *unit(s)* (*Complete up to 4 times over 4 semesters*)

Practicum (6 units)

- EDCO 294 - Practicum in Self-Development 3 *unit(s)*
- EDCO 218 - Counseling Process & Techniques 3 *unit(s)*

Total Units Required (18-27 units)

Please note, all requirements for the PPS School Counseling Credential must be completed for a PPS School Counseling Internship Credential candidate to be recommended to CTC for a clear PPS School Counseling Credential.

Spartan Accelerated Graduate Education (SAGE) Scholars

Spartan Accelerated Graduate Education (SAGE) Programs programs are combined bachelor's and master's programs at SJSU (per University Policy F19-1). Sometimes they may also satisfy the requirements for a credential. Students in these programs pursue a bachelor's and master's degree simultaneously. These program allow students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

Child and Adolescent Development, BA + Early Childhood Special Education Credential + Special Education, MA

This Spartan Accelerated Graduate Education (SAGE) program provides a pathway for students to earn a bachelor's degree in Child and Adolescent Development with a focus on early childhood and a master's degree in Special Education with a teaching credential in Early Childhood Special Education. Undergraduates enrolled in the program begin their graduate studies while completing undergraduate requirements. Students who complete this program will have developed a deep understanding of child development, including how to apply this knowledge in the instruction of young children with and without disabilities. Students completing this program will be eligible for endorsement for both the CTC Child Development Permit and the Education Specialist Credential in Early Childhood.

Total SAGE Program Units (BA + Credential + MA) 150

For more information, contact the Child & Adolescent Development Department at childdev@sjsu.edu.

Admissions Requirements

Most frosh and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during their Spring semester of Year 3. As per AA 2012-01, students will not need to apply formally for graduate admission if accepted into this program. To be eligible:

1. Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program entry;
2. Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (CHAD 100W) with a C or better;
3. Students must have a minimum 2.75 cumulative GPA;
4. Students must complete the Basic Skills Requirements, in the form of coursework in reading, writing, and math completed with a grade of B- or better, or an equivalent standardized test (e.g., CBEST) by the time of program entry;
5. Students must complete the Subject Matter Competency Requirement (9 units of coursework related to child development and early childhood education) by the time of program entry.

After completing those steps, students will submit a SAGE application to the Department of Special Education. Applications will be processed by the Special Education Department and not through CalState Apply. They are processed without an application fee. With the exception of the letters of recommendation (see below), all application documents should be collated into a single pdf and sent to the Special Education Department via special@sj.edu. This application includes the following components:

1. SJSU SAGE application and tracking form;
2. SPED departmental application form;
3. A Statement of Purpose that explains how they arrived at their decision to become an early childhood special educator and their commitment to complete the requirements for the SAGE program (one to two pages in length, double spaced, 10-12 font type);
4. Transcripts for any coursework completed at other colleges or universities not showing in the students' MySJSU account;
5. Two letters of recommendation addressing the applicant's qualifications and potential for success in the SAGE program (all letters must be written within the past 2 years and must include the date the letter was written, the signature of the recommender, and contact information of the recommender);
6. A Certificate of Clearance from the California Commission on Teacher Credentialing.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BA is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- Maintain GPA of 3.0 or higher.
- The proposed graduate Course of Study Plan must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.
- To convert to graduate status, students must have completed their 45 hours of pre-professional service and all lower division requirements.
- To enter student teaching, students must have completed Subject Matter Competency requirements (in the form of 9 units of coursework related to child development and early childhood education).

- Students must also demonstrate aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments
- Demonstrating aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Areas B4 and E, and SJSU Studies (S and V). Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units unless they are listed in the University Electives section of the major.

Note that SAGE students must meet the same undergraduate graduation requirements as all Child and Adolescent Development majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE students must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (150 units)

Child and Adolescent Development, BA (105 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (38 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass the 100W course with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B, C, D/American Institutions (US123), R 36 unit(s)
- Physical Education 2 unit(s)

Major Requirements (51 units)

Lower Division Core (12 units)

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- CHAD 80 - Quantitative Analysis in Developmental Science 3 *unit(s)* (B4) (*preferred*) OR STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (May substitute UNVS 15/MATH 15 or SOCS 15/SOCI 15)

Upper Division Core (24 units)

- CHAD 100W - Writing Workshop 3 *unit(s)*

- CHAD 101 - Research Methods in Developmental Science 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*
- CHAD 165 - Risk and Resilience in a Community Context 3 *unit(s)*
- CHAD 168 - Social and Emotional Development 3 *unit(s)*
- CHAD 169 - Motivating Children and Adolescents in Educational Settings 3 *unit(s)*
- CHAD 170 - Cognitive Development in Context 3 *unit(s)*
- CHAD 195 - Senior Seminar in Child & Adolescent Development 3 *unit(s)*

Early Childhood Focus (15 units)

- CHAD 150 - Development of Language and Communicative Competence 3 *unit(s)*
- CHAD 152 - Foundations for Early Childhood Curriculum 3 *unit(s)*
- CHAD 160 - Practicum in Early Childhood Education 3 *unit(s)*
- CHAD 161 - Administration of Early Childhood Programs 3 *unit(s)*
- CHAD 173 - Critical Issues in Infant/Toddler Development 3 *unit(s)*

University Electives (16 units)

Special Education, MA + Early Childhood Special Education Credential (45 units)

Special Education Required Courses (15 units)

- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S)
- EDSE 104 - Early Intervention for Children with Disabilities 3 *unit(s)*
- EDSE 108 - Assessing Young Children 3 *unit(s)*
- EDSE 110 - Students with Autism Spectrum Disorders 3 *unit(s)*
- EDSE 124 - Teach for Social Justice: Language & Disability 3 *unit(s)* (V)

Core Courses (24 units)

- EDSE 154 - Advanced Fieldwork in ESN and ECSE 6 *unit(s)*
- EDSE 192B - All Learners: An Introduction to Disabilities 1 *unit(s)*
- EDSE 192C - Inclusive Strategies for Educating Students with Disabilities 1 *unit(s)*
- EDSE 192D - Introduction to Special Education Policy and Law 1 *unit(s)*
- EDSE 221 - Methods for Young Children with Disabilities 3 *unit(s)*
- EDSE 228A - Topics in Collaboration and Transition 3 *unit(s)*
- EDSE 234 - Early Field Experiences in Special Education 1-3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*
- EDSE 279 - Positive Behavior Support 3 *unit(s)*

Research Course (3 units)

- EDSE 285 - Intro to Action Research in Special Education 3 *unit(s)*

Culminating Experience (3 units)

- EDSE 220 - Advanced Research Projects in Special Education 3 *unit(s)*

Total Units Required (150 units)

Child and Adolescent Development, BA + MA

This Spartan Accelerated Graduate Education (SAGE) program provides a pathway for students to earn a bachelor's degree in Child and Adolescent Development with a focus working in community organizations that serve the needs of diverse children, youth, and families. Undergraduates enrolled in the program begin their graduate studies while completing undergraduate requirements. Students who complete this program will have developed a deep understanding of child and adolescent development, the contexts that shape their development, advocacy and collaborative leadership, and how to apply these skills to work in community organizations serving diverse children, youth, and families.

Total SAGE Program Units (BA + MA) 141

For more information, contact the Child & Adolescent Development Department at childdev@sjsu.edu.

Admissions Requirements

Most frosh and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during their Spring semester of Year 3. Applications will be processed by the Department of Child and Adolescent Development and without an application fee. Students will not need to apply formally for graduate admission if accepted into this program. To be eligible:

1. Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program entry;
2. Students must have successfully completed all lower division GE requirements;
3. Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (CHAD 100W) with a C or better prior to admission into the program;
4. Students must have a minimum 3.0 GPA in major coursework at time of admission.

Prior to applying to the program, prospective SAGE candidates will:

1. Meet with the ChAD SAGE advisor.
2. Meet with their ChAD Academic Advisor, who must sign the SAGE Application Form and the Course of Study Plan. The form and plan should be routed to the Registrar's Office and a copy should be included in the student application to the department.

After completing those steps, students will submit a Departmental Application. With the exception of the letters of recommendation (see below), all SAGE MA application documents should be collated into a single pdf and sent to the Department of Child and Adolescent Development (childdev@sjsu.edu). This application includes the following components:

1. Departmental application form;
2. A 1-2 page Statement of Purpose that explains their passion and career interests in community organizations, how this program will help them meet their career goals, and their commitment to complete the requirements for the SAGE program (one to two pages in length, double spaced, 10-12 font type);
3. Transcripts for any coursework completed at other colleges or universities not showing in the students' MySJSU account;
4. Two letters of recommendation addressing the applicant's qualifications and potential for success in the SAGE program (all letters must be written within the past 2 years and must include the date the letter was written, the signature of the recommender, and contact information of the recommender).

Applications will be processed by the Department of Child and Adolescent Development and not through CalState Apply. They are processed without an application fee.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BA is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- Maintain GPA of 3.0 or higher.
- To convert to graduate status, students must have completed all lower division requirements.
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Areas B4 and E. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units unless they are listed in the University Electives section of the major.

SAGE students must meet the same undergraduate graduation requirements as all Child and Adolescent Development majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE students must meet all current graduate program requirements.

Program Requirements (141 units)

Child and Adolescent Development, BA (111 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (41 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass the 100W course with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B, C, D/American Institutions (US123), F, R, S, V 39 *unit(s)*
- Physical Education 2 *unit(s)*

Major Requirements (51 units)

Lower Division Core (12 units)

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- CHAD 80 - Quantitative Analysis in Developmental Science 3 *unit(s)* (B4) OR STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (May substitute UNVS 15/MATH 15 or SOCS 15/SOCI 15)

Upper Division Core (24 units)

- CHAD 100W - Writing Workshop 3 *unit(s)* (*WID*)
- CHAD 101 - Research Methods in Developmental Science 3 *unit(s)*
- CHAD 162 - Cultural Influences in Childhood and Adolescence 3 *unit(s)*
- CHAD 165 - Risk and Resilience in a Community Context 3 *unit(s)*
- CHAD 168 - Social and Emotional Development 3 *unit(s)*
- CHAD 169 - Motivating Children and Adolescents in Educational Settings 3 *unit(s)*
- CHAD 170 - Cognitive Development in Context 3 *unit(s)*
- CHAD 195 - Senior Seminar in Child & Adolescent Development 3 *unit(s)*

Community Focus Courses (15 units)

- CHAD 104 - Program Evaluation and Assessment in Community-Based Programs 3 *unit(s)*
- CHAD 156 - Social Media and Youth Civic Engagement 3 *unit(s)*
- CHAD 157 - Program Management in Community Organizations 3 *unit(s)*
- CHAD 158 - Practicum in Community Organizations 3 *unit(s)*
- CHAD 163 - Critical Issues in Adolescent Development 3 *unit(s)* OR CHAD 173 - Critical Issues in Infant/Toddler Development 3 *unit(s)*

University Electives and/or Minor (19 units)

Master's Requirements (30 units)

Core Courses (18 units)

- CHAD 260A - Seminar in Child and Adolescent Development: Research 3 *unit(s)* (*GWAR*)
- CHAD 260B - Seminar in Child and Adolescent Development 3 *unit(s)*
- CHAD 262 - Culture and Diversity in Child & Adolescent Development 3 *unit(s)*
- CHAD 266 - U.S. Social Policy Affecting Children and Families 3 *unit(s)*
- CHAD 268 - Seminar in Social and Emotional Development 3 *unit(s)*
- CHAD 270 - Seminar in Cognitive and Language Development 3 *unit(s)*

Interdisciplinary Electives (9 units)

Complete three department-approved elective courses from the department-approved list. Electives may be taken at any time during the MA program. In some circumstances, MA candidates may petition to take an elective not on the list. Candidates should submit a written statement to the Graduate Program Coordinator with the course request and justification.

Recommended Courses:

- CHAD 252 - Community Leadership for Child & Family Wellness 3 *unit(s)*
- CHAD 254 - Professional Practice with Children and Families 3 *unit(s)*
- CHAD 285 - Special Topics in Child & Adolescent Development 3 *unit(s)*

Culminating Experience (3 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- CHAD 299 - Master's Thesis 3-6 *unit(s)*

Plan B (Project)

- CHAD 298 - Special Studies in Child and Adolescent Development 3-6 *unit(s)*

Total Units Required (141 units)

The standalone Child and Adolescent Development, BA program requires 28 units of University Electives or Minor. Students satisfy 9 of these units in this SAGE Scholars Program with the three MA Interdisciplinary Electives. It is expected that these MA-level graduate courses will require mastery of the more rudimentary knowledge taught at the undergraduate level, and are likely to cover the content of the undergraduate courses that they replace.

Child and Adolescent Development, Preparation for Teaching, BA + Multiple Subject Credential + Teaching, MAT

This Spartan Accelerated Graduate Education (SAGE) program provides a pathway for students to earn a bachelor's degree in Child and Adolescent Development with a focus on K-8 teacher preparation and a Multiple Subject Credential and master's degree in teacher education. Undergraduates enrolled in the program begin their graduate studies while completing undergraduate requirements. Students who complete this program will have developed a deep understanding of child and adolescent development, including how to apply this knowledge to the instruction of children in Kindergarten through 8th grade.

Total SAGE Program Units (BA + Credential + MAT) 166

For more information, contact the Child & Adolescent Development Department at childdev@sjsu.edu.

Admissions Requirements

Most frosh and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during their Spring semester of Year 3. As per AA 2012-01, students will not need to apply formally for graduate admission if accepted into this program. To be eligible:

1. Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program entry;
2. Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (CHAD 100W) with a C or better;
3. Students must have a minimum 2.75 cumulative GPA over the last 60 semester/90 quarter units across colleges.

Interested students must meet with their ChAD Academic Advisor, who will fill out a SAGE Program worksheet and compose a Course of Study Plan. A copy of both the worksheet and the plan should be included in the student application to the department. The Department of Child and Adolescent Development will submit a SAGE application to the Teacher Education Department. With the exception of the letters of recommendation (see below), all application documents should be collated into a single pdf and sent to the Teacher Education Department via teacher-education@sjsu.edu. This application includes the following components:

1. SJSU SAGE application and tracking form;
2. TED departmental application form;
3. 1-page resume;
4. A 1-2 page statement of purpose that explains how they arrived at their decision to become an early childhood special educator and their commitment to complete the requirements for the SAGE program (one to two pages in length, double spaced, 10-12 font type);
5. Transcripts for any coursework not showing in MySJSU account;
6. Two letters of recommendation addressing the applicant's qualifications and potential for success in the SAGE program (all letters must be written within the past 2 years and must include the date the letter was written, the signature of the recommender, and contact information of the recommender);
7. A Certificate of Clearance from the California Commission on Teacher Credentialing.

Applications are processed by the Teacher Education Department and **not** through CalState Apply. They are processed without an application fee and are reviewed by faculty in the Teacher Education Department. Applicants may be contacted to schedule an admissions interview with the Teacher Education Department.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Regularly meet with an academic advisor to plan and track coursework and graduate status. Once the BA is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- Maintain GPA of 3.0 or higher.
- The proposed graduate Course of Study Plan must be approved by the graduate coordinator before the student may be considered a candidate for the MAT degree.
- To convert to graduate status, students must have completed their 45 hours of pre-professional service and all lower division requirements.
- To enter student teaching, students must have completed Subject Matter Competency requirements (established by the California Commission on Teacher Credentialing).
- Students must also demonstrate aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units.

Note that SAGE students must meet the same undergraduate graduation requirements as all Child and Adolescent Development majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE students must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (166 units)

Child and Adolescent Development, BA (117 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (44-45 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass the 100W course with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B1, B2, C, D/American Institutions (US123), F; SJSU Studies Areas R, S, V 39 *unit(s)*
- Physical Education 2 *unit(s)*
- University Electives 3-4 *units*

Major Requirements (39 units)

Lower Division Core (12 units)

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- CHAD 80 - Quantitative Analysis in Developmental Science 3 *unit(s)* (B4) OR STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (May substitute UNVS 15/MATH 15 or SOCS15/SOCI 15)

Upper Division Core (27 units)

- CHAD 100W - Writing Workshop 3 *unit(s)* (WID)
- CHAD 101 - Research Methods in Developmental Science 3 *unit(s)*
- CHAD 159 - Practicum in K-8 Education 3 *unit(s)*
- CHAD 162 - Cultural Influences in Childhood and Adolescence 3 *unit(s)* OR CHAD 164 - Contemporary Parenting 3 *unit(s)*
- CHAD 163 - Critical Issues in Adolescent Development 3 *unit(s)* OR CHAD 173 - Critical Issues in Infant/Toddler Development 3 *unit(s)*
- CHAD 168 - Social and Emotional Development 3 *unit(s)*
- CHAD 169 - Motivating Children and Adolescents in Educational Settings 3 *unit(s)*
- CHAD 170 - Cognitive Development in Context 3 *unit(s)*
- CHAD 195 - Senior Seminar in Child & Adolescent Development 3 *unit(s)*

Multiple Subjects Preparation Core Curriculum (33-34 units)

Language and Literature (15-16 units)

- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (ENGL 1B also accepted for transfer students.)
- ENGL 112A - Children's Literature 3 *unit(s)*
- ENGL 103 - Modern English 4 *unit(s)* OR LING 107 - Patterns of English 3 *unit(s)*
- CHAD 135 - Development of Language & Literacy in Children 3 *unit(s)*

Mathematics (9 units)

- MATH 12 - Number Systems 3 *unit(s)* (B4)
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 106 - Intuitive Geometry 3 *unit(s)*

Science (3 units)

- ENV5 158 - Environmental Education 3 *unit(s)*

Visual and Performing Arts (3 units)

Complete one course from:

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*
- ART 39 - Multicultural Arts for Children 3 *unit(s)*
- ART 138 - Elementary Art Methods 3 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- TA 167 - Theatre in Education 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*

Physical Education and Health (3 units)

SAGE students complete EDTE 294 instead of CHAD 149.

- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Multiple Subject Credential + Teaching, MAT (49 units)

- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDEL 108B - Curriculum: Science 3 *unit(s)*
- EDEL 108C - Curriculum: Social Studies 3 *unit(s)*
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*
- EDEL 143A - Beginning Student-Teaching (Phase I) 1-6 *unit(s)* (4 units required)
- EDEL 143B - Advanced Student-Teaching (Phase II) 1-10 *unit(s)* (10 units required)
- EDEL 143P - Introduction to Student Teaching 1 *unit(s)*
- EDTE 208 - Educational Sociology 3 *unit(s)*
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 250 - Qualitative Research in Education 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 297C - CalTPA Support 1 *unit(s)* (Course should be taken twice.)
- EDTE 297F - Field Support 1 *unit(s)* (Course should be taken twice.)

Culminating Experience (3 units)

Plan B (Portfolio or Project):

- EDTE 298 - Special Studies in Education 1-6 *unit(s)* (3 units required)

Total Units Required (166 units)

The standalone Child and Adolescent Development, Preparation for Teaching, BA program requires the completion of CHAD 149. Students satisfy this course in this SAGE Scholars Program by completing EDTE 294. Students must

complete a minimum of 120 units to satisfy the bachelor's degree and a minimum of 30 units to satisfy the master's degree. In order to satisfy these requirements, 17 units of the credential count towards the bachelor's degree and 24 units of the credential count towards the master's degree.

SJSU Online

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. These upper division degree completion programs are offered through a special session that requires a separate application process. If interested, please contact one of our Enrollment Counselors for more information.

Interdisciplinary Studies, Educational and Community Leadership Concentration, BA (SJSU Online)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

The Interdisciplinary Studies BA Concentration in Educational and Community Leadership, offered by the Department of Educational Leadership, empowers students to take a role in promoting change for social justice in their communities. The program is designed to enhance students' opportunities for professional advancement in careers in the fields of education, child and youth services, community organizations, and social services with a curriculum that brings together a variety of academic disciplines that explore societal inequities and methods to accentuate strengths of a community and of its members.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Graduation Requirements	9
Major Core Requirements	21
Specialization Requirements	15
University Electives	15
Total	120

Program Roadmaps

The 2-Year and 3-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better. Applicants must also have completed the Core Lower Division General Education Requirements (39 units), including all four CSU-approved Basics Skills courses, each with a C- or better:

- (A1) Oral Communication/Speech
- (A2) Written English Composition
- (A3) Critical Thinking/Logic
- (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)

GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.

Applicants interested in selecting the Early Childhood Education Specialization must have or find access for field placement in a suitable early childhood setting.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GVAR may be found in the Undergraduate University Graduation Requirements (GVAR) section.

This requirement is fulfilled in this major with:

- CHAD 100W - Writing Workshop 3 *unit(s)* (*WID*)

Major Requirements (36 units)

Required Core (21 units)

- CHAD 100W - Writing Workshop 3 *unit(s)* (*WID*)
- CHAD 101 - Research Methods in Developmental Science 3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*
- EDLD 110 - Introduction to Educational and Community Leadership 3 *unit(s)*
- EDLD 120 - The Right to Learn: Language, Dignity, and Education 3 *unit(s)*
- EDLD 140 - Identity, Solidarity, and Social Justice Leadership 3 *unit(s)*
- EDSP 150 - Communication, Leadership, and Social Justice 3 *unit(s)*

Specialization (15 units)

Complete one of the following specialization:

Early Childhood Education

Must have or find access for field placement in a suitable early childhood setting to complete this specialization.

- CHAD 60 - Child Development 3 *unit(s)* (*E*)
- CHAD 152 - Foundations for Early Childhood Curriculum 3 *unit(s)*
- CHAD 160 - Practicum in Early Childhood Education 3 *unit(s)*
- CHAD 161 - Administration of Early Childhood Programs 3 *unit(s)*
- CHAD 164 - Contemporary Parenting 3 *unit(s)*

Inclusive Education

- EDEL 102 - Psychological Foundations of Education 3 *unit(s)*
- EDEL 108E - Teaching Reading in Linguistically and Culturally Diverse Classrooms 3 *unit(s)*
- EDSP 110 - Survey of Communication Disorders 3 *unit(s)*
- EDSE 224 - Methods for Emergent Bilinguals with Disabilities 1-3 *unit(s)* (3 *units* required)
- EDSE 228A - Topics in Collaboration and Transition 3 *unit(s)*

University Electives (15 units)

May include lower or upper division, at least 9 units must be upper division.

Total Units Required (120 units)

Charles W. Davidson College of Engineering

- Overview
- Engineering Student Success Center (ESSC)
- MESA Engineering Program (MEP)
- Preparation for Engineering Programs
- Preparation for Technology and Aviation Programs
- Progress to Degree Requirements
- General Education Requirements
- Undergraduate Programs Offered
- Graduate Programs Offered

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Website: engineering.sjsu.edu

Leadership:

Sheryl Ehrman, Dean

Nicole Okamoto, Associate Dean for Undergraduate Programs and Student Success

Raymond Yee, Associate Dean of Extended Studies

Xiao Su, Associate Dean of Graduate Studies and Research

Overview

The Charles W. Davidson College of Engineering offers undergraduate and graduate programs in Aerospace Engineering; Aviation (BS only); Biomedical, Chemical and Materials Engineering; Civil and Environmental Engineering; Computer and Software Engineering; Electrical Engineering; Engineering Technology, Interdisciplinary Engineering; Industrial and Systems Engineering; and Mechanical Engineering. Additional graduate programs are offered in Artificial Intelligence, Engineering Management, Human Factors/Ergonomics, and Quantum Technology. Each department offers a variety of major and minor programs which are identified in their respective parts of this catalog.

Engineering Student Success Center (ESSC)

Office: Engineering Building 116

Telephone: 408-924-3990

Email: success-engineering@sjsu.edu

Website: www.sjsu.edu/essc

The mission of the Engineering Student Success Center (ESSC) is to empower engineering students from application to graduation, support their academic and personal growth, and engage them as lifetime members of the college learning community. The ESSC will provide programs and advising for undergraduate and graduate students in the

College of Engineering that support students' smooth transition to SJSU, their transformation into active learners and owners of their academic careers, and promote their personal and professional development.

The Community for Engineering Learning and Living (CELL) is a themed living community offered by the University Housing Services for first year engineering students. CELL's objectives are to provide a cooperative learning environment, to encourage and build the engineering community and to foster a sense of belonging and responsibility to the community. Through facilitated study groups, CELL students will experience the academic support and cooperation of a community committed to academic success. CELL students will have regular access to faculty, advisors and industry professionals through workshops and programs. CELL is about shared experiences and creating a vibrant and caring engineering community.

MESA Engineering Program

Office: Engineering Building 366

Telephone: 408-924-3830

Email: mesa.engineering@sjsu.edu

The MESA Engineering Program and the Women in Engineering Program work to increase the number of graduates entering the engineering profession from traditionally under-represented and economically disadvantaged groups. The MESA Engineering Program actively recruits students, provides support services until graduation and acts as liaison with companies offering employment experiences. It assists students with admissions, academic and personal counseling, financial aid and scholarships, and registration. The MESA Engineering Program also maintains a study center for tutoring, workshops, individual and group study and social functions. A summer job placement program assists students in obtaining jobs in industry.

Preparation for Engineering Programs

To prepare for engineering, the high school student should take as much advanced math and science as possible, as well as high school engineering and technology courses that may be available at their school. Students with scores of 3 or above on the AP Calculus exams may be able to reduce the number of math courses taken at SJSU; students who are not calculus-ready on entrance may take a longer time to graduate. Students transferring from California community colleges will be given junior level standing in the major if they have successfully completed the following course work:

- 12 semester units of calculus and differential equations
- 5-10 semester units of chemistry
- 8-13 semester units of physics which require calculus as a prerequisite
- 10-14 units of lower division engineering appropriate to their engineering major

All engineering majors require certain coursework (typically two semesters of calculus and one of calculus-based physics) before transfer. Completion of supplemental major-specific coursework will result in improved chances for admission and shorter time to graduation. The list of required and supplemental courses for each major can be found [here](#). Transfer students should use assist.org or this SJSU online catalog to determine the specific lower division requirements of their major. Graduation following two academic years of study is possible if the student completes all lower division units before transfer, satisfactorily completes the required upper division coursework and remains in good standing in the major.

Preparation for Technology and Aviation Programs

To prepare for technology and aviation majors, the high school student should take industrial technology classes such as electronics, computer-aided design, and manufacturing, or any engineering classes offered at their school,

and should complete courses in physics, chemistry, and pre-calculus or calculus. Community college students are urged to complete as many of the lower division requirements as possible in chemistry, physics, mathematics and technology or aviation at the community college.

Progress to Degree Requirements

All College of Engineering undergraduates are required to stay in good standing in their major by maintaining a Major GPA of 2.0 or above. The Major GPA includes all courses required for the major, including both lower and upper division math, science, engineering, technology, aviation or business courses required by their major. Some departments have additional grade requirements for individual courses, groups of courses or all courses taken in their department. See departmental sections for these requirements. Additional university GPA requirements are specified elsewhere in this catalog. The Engineering Major Academic Notice Policy can be found on the Engineering Student Success Center website.

Incoming Engineering frosh, or other students seeking to change major into Engineering, must complete MATH 30 (or 30X), MATH 31 (or 31X) and PHYS 50 within their first 60 units at SJSU. Change of major information can be found on the Engineering Student Success Center website.

General Education Requirements

Of the 51 units required by the university up to 30 units may be satisfied by specified major and support requirements for most programs. Most engineering majors may satisfy the remaining units by taking AMS 1A-AMS 1B or courses covering similar requirements (12 units), ENGL 1A (3 units), Oral Communication (3 units) and Ethnic Studies (3 units). Transfer students may satisfy core GE through the IGETC or CSU breadth requirements. Students should consult advisors in the Engineering Student Success Center for details for their specific programs.

Undergraduate Programs Offered

The College of Engineering offers BS degrees in:

- Aerospace Engineering, BS
- Aviation, BS
- Biomedical Engineering, BS
- Chemical Engineering, BS
- Civil Engineering, BS
- Computer Engineering, BS
- Electrical Engineering, BS
- Engineering Technology, Computer Network System Management (CNSM) Concentration, BS
- Engineering Technology, Manufacturing Systems Concentration, BS
- Industrial and Systems Engineering, BS
- Interdisciplinary Engineering, BS
- Interdisciplinary Engineering, BS (SJSU Online) (Currently Not Accepting Students)
- Materials Engineering, BS
- Mechanical Engineering, BS
- Software Engineering, BS

Please see the Majors and Programs or Colleges and Departments listings in this catalog for information about each undergraduate major.

Graduate Programs Offered

The College of Engineering offers graduate work leading to Master of Science degrees in:

- Aerospace Engineering, MS
- Artificial Intelligence, MS
- Biomedical Engineering, MS
- Biomedical Engineering, Biomedical Devices Concentration, MS
- Chemical Engineering, MS
- Civil Engineering, MS
- Computer Engineering, MS
- Electrical Engineering, MS
- Engineering Management, MS
- Engineering Technology, MS
- Engineering, Electronic Materials and Devices Concentration, MS (Discontinued Eff Fall 2024)
- Engineering, MS
- Human Factors/Ergonomics, MS
- Human Factors/Ergonomics, User Experience Concentration, MS
- Industrial and Systems Engineering, MS
- Materials Engineering, MS
- Mechanical Engineering, MS
- Quantum Technology, MS (offered jointly by Departments of Electrical Engineering and Physics and Astronomy)
- Software Engineering, MS

Graduate work offered by the College of Engineering reflects and supports the advanced scientific and technological endeavor which is typical of California industry, government and business.

Departmental curricula provide full- and part-time students the opportunity either to obtain master's degrees or to take specialized courses to improve job capabilities.

The Master of Science in Engineering offered by the Interdisciplinary Engineering program has unique, interdisciplinary characteristics which may be particularly appealing to persons with a bachelor's degree in engineering who are currently working in a technical management area and wish to extend their education.

For students whose native language is not English please see the English Language Proficiency (ELP) test requirements on the Graduate Admissions website. Students who meet this and the requirements for admission to the Graduate Division as outlined in this catalog should see individual department listings for requirements for admission to classified standing, conditionally classified standing and advancement to candidacy for the specific degree in engineering.

In addition to departmental requirements, the University requires that all graduate students demonstrate competency in written English as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled "Graduation Writing Assessment Requirement (GWAR)" for details. Each graduate program has a designated GWAR course embedded within the program degree requirements. In addition, all graduates must complete an acceptable thesis, project or comprehensive examination.

Engineering Extended Studies (EES)

Engineering Extended Studies (EES) Department at San Jose State University within the Charles W. Davidson College of Engineering supports innovative programs and continuous learning in a climate of constant disruption.

Undergraduate Major(s)

Aerospace Engineering, BS

The Aerospace Engineering BS, offered by the Department of Aerospace Engineering, is based on a strong core of mathematics, science, and engineering science and is designed to prepare students for professional careers in aerospace engineering fields, such as aircraft and space systems research, design, development, testing, and integration. It also provides excellent preparation for graduate study. The Aerospace Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Aerospace and Similarly Named Engineering Programs Program Criteria.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	21
Major Preparation	36
Major Requirements	63
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

Students in this major must complete all courses in Required in the Major (All courses in Preparation, Core, and Concentration/Specialization) with a "C or better" to graduate.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below and General Education waivers. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Of the 39 units, the following 15 units are not satisfied in the major:

- GE Area A1 3 *unit(s)*
- GE Area A2 3 *unit(s)*
- GE Area C1 3 *unit(s)*
- GE Area C2 3 *unit(s)*

- GE Area F 3 *unit(s)*

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)

- POLS 170V - American Politics in Global Perspective 3 unit(s) (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (36 units)

To qualify for a baccalaureate degree in Aerospace Engineering, a student must receive a grade of "C" or better in all courses in preparation for the major.

- CHEM 1A - General Chemistry 5 unit(s) (B1+B3)
- ENGL 1B - Argument and Analysis 3 unit(s) (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 unit(s) (B4)
- MATH 31 - Calculus II 4 unit(s) (B4)
- MATH 32 - Calculus III 3 unit(s) (B4)
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 unit(s)
- AE 105 - Mathematical Methods for Aerospace Engineers 3 unit(s)
- PHYS 50 - General Physics I: Mechanics 4 unit(s) (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 unit(s) (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 unit(s) (B1+B3)

Major Requirements (63 units)

To qualify for a baccalaureate degree in Aerospace Engineering, a student must receive a grade of "C" or better in all courses required for the major.

Core Courses (13 units)

- EE 98 - Introduction to Circuit Analysis 3 unit(s)
- ENGR 10 - Introduction to Engineering 3 unit(s) (E)
- ENGR 100W - Engineering Reports 3 unit(s) (WID+R)
- AE 20 - Computer-Aided Design for Aerospace Engineers 2 unit(s)
- AE 30 - Computer Programming for Aerospace Engineers 2 unit(s)

Required Courses (39 units)

- AE 112 - Aerospace Structures and Materials I 4 unit(s)
- AE 114 - Aerospace Structures and Materials II 3 unit(s)

- AE 138 - Vector-Based Dynamics for Aerospace Applications 3 *unit(s)*
- AE 140 - Rigid Body Dynamics 3 *unit(s)*
- AE 157 - Aerospace Automatic Control Systems Design 3 *unit(s)*
- AE 160 - Aerodynamics I 3 *unit(s)*
- AE 162 - Aerodynamics II 3 *unit(s)*
- AE 164 - Aerothermodynamics 5 *unit(s)*
- AE 165 - Aerospace Flight Mechanics 3 *unit(s)*
- AE 167 - Aerospace Propulsion 3 *unit(s)* OR AE 267 - Space Propulsion Systems 3 *unit(s)*
- AE 168 - Aerospace Vehicle Dynamics and Control 3 *unit(s)*

Numerical Methods / Simulation Course

Complete one course:

- AE 119 - Finite Element Analysis for Aerospace Applications 3 *unit(s)*
- AE 149 - Advanced Dynamics and Simulation 3 *unit(s)*
- AE 169 - Computational Fluid Dynamics 3 *unit(s)*

Capstone (8 units)

Complete one of the following options:

Option 1: Aircraft Design

- AE 171A - Aircraft Design I 3 *unit(s)* (S)
- AE 171B - Aircraft Design II 3 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)

Option 2: Spacecraft Design

- AE 172A - Spacecraft Design I 3 *unit(s)* (S)
- AE 172B - Spacecraft Design II 3 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)

Technical Electives (3 units)

A technical elective may be chosen from the following list:

- AE 110 - Space Systems Engineering 3 *unit(s)*
- AE 119 - Finite Element Analysis for Aerospace Applications 3 *unit(s)*
- AE 142 - Astrodynamics 3 *unit(s)*
- AE 149 - Advanced Dynamics and Simulation 3 *unit(s)*
- AE 166 - Rocketry 3 *unit(s)*
- AE 169 - Computational Fluid Dynamics 3 *unit(s)*
- AE 173 - Uncrewed Air Vehicle Design 3 *unit(s)*

- AE 180 - Individual Studies 1-3 *unit(s)* (project must be approved by AE Department Chair)
- AE 199 - Special Topics in Aerospace Engineering 1-4 *unit(s)* (course must be approved by AE Department Chair)
Students with GPA 2.7 or higher may take an MSAE course as their elective

Non-AE courses from any of the topical lists below are also eligible

Design/Manufacturing

- ME 110 - Manufacturing Processes 3 *unit(s)*
- ME 136 - Design for Manufacturability 3 *unit(s)*
- ME 154 - Mechanical Engineering Design 4 *unit(s)*
- ME 165 - Computer-Aided Design in Mechanical Engineering 3 *unit(s)*
- ISE 114 - Safety Engineering 3 *unit(s)*

Management/Economics

- ISE 102 - Engineering Economic Systems 3 *unit(s)*
- ISE 105 - Introduction to Systems Engineering 3 *unit(s)*
- ISE 151 - Engineering Management Systems in Global Society 3 *unit(s)*

Mathematics, Numerical Methods & Modeling

- MATH 112 - Vector Calculus 3 *unit(s)*
- MATH 129B - Linear Algebra II 3 *unit(s)*
- MATH 133B - Partial Differential Equations 3 *unit(s)*
- MATH 143M - Numerical Analysis and Scientific Computing 3 *unit(s)*
- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- ISE 170 - Operation Research 3 *unit(s)*

Materials

- MATE 131 - Fundamentals of Additive Manufacturing 3 *unit(s)*
- MATE 135 - Introduction to Composite Materials 3 *unit(s)*

Physics

- ASTR 117A - Astrophysics I 3 *unit(s)*
- ASTR 117B - Astrophysics II 3 *unit(s)*
- PHYS 105A - Advanced Mechanics I 4 *unit(s)*
- PHYS 105B - Advanced Mechanics II 3 *unit(s)*
- PHYS 120A - Electronics, Data Acquisition & Analysis 3 *unit(s)*
- PHYS 120C - Advanced Physics Lab: Optics and Lasers 3 *unit(s)*
- PHYS 158 - Modern Optics 3 *unit(s)*
- PHYS 160 - Thermodynamics and Statistical Physics 3 *unit(s)*

Structures

- CE 160 - Structural Analysis 3 *unit(s)*

Thermal/Fluids

- ME 114 - Heat Transfer 3 *unit(s)*
- ME 149 - Engineering Acoustics 3 *unit(s)*

Controls/Mechatronics

- ME 106 - Fundamentals of Mechatronics Engineering 4 *unit(s)*

Total Units Required (120 units)

Aviation, BS

The Aviation BS degree is offered by the Department of Aviation and Technology. The curriculum provides a four-year pattern of coursework for those interested in the several different aspects of aviation. In addition to the required course work in general education, aviation, science and business, the student has the opportunity to choose one of four options - Professional Flight, Flight Operations, Aviation Management, or Maintenance Management.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	30
Major Preparation	20
Major Requirements	27
Specialization	43
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in Major (all courses in preparation, core, and concentration) must be completed with a grade of "C-" or better. With the exception of ENGR 100W which must be completed with a grade of "C" or better.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a grade of "C-" or better to meet the requirement. Consult with a major advisor for details. Of the 39 units, the following 24 units are not satisfied in the major:

- GE Area A English Language Communication and Critical Thinking 9 unit(s)
- GE Area C Arts and Letters 9 unit(s)
- GE Area E Human Understanding and Development 3 unit(s)
- GE Area F Ethnic Studies 3 unit(s)

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (20 units)

- BUS2 90 - Business Statistics 3 *unit(s)*
- GE Area B2 3 *unit(s)*
- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (B4) (MATH 30 or MATH 30X may be used in lieu of MATH 71)

Accounting (3 units)

Complete one course:

- BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS1 20N - Survey of Accounting 3 *unit(s)*

Physics (8 units)

Complete one sequence:

Physics A

- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Physics B

- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3) (Students may use PHYS 2B instead of PHYS 51)

Major Requirements (70 units)

To qualify for a baccalaureate degree in Aviation, students must earn a grade of "C-" or better in each required major and preparation course.

Core Courses (27 units)

- AVIA 78 - Introduction to Aviation Management 3 *unit(s)*

- AVIA 128 - Aviation Safety and Security 3 *unit(s)*
- AVIA 141 - Human Factors in Aviation 3 *unit(s)*
- AVIA 173 - Aviation Law 3 *unit(s)*
- AVIA 176 - Airline Operations and Management 3 *unit(s)*
- AVIA 190 - Senior Capstone Seminar 3 *unit(s)*
- AVIA 198 - Aviation and Human Civilization 3 *unit(s)* (V) (*any course in Area V may be substituted*)
- BUS3 186 - Professional and Business Ethics 3 *unit(s)* (S)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)

Specialized Courses (43 units)

Choose one specialization.

Flight Operations

- AVIA 1 - Introduction to the Aviation Industry 3 *unit(s)*
- AVIA 31 - Aircraft Theory and Design 3 *unit(s)*
- AVIA 42 - Aircraft Systems 3 *unit(s)*
- AVIA 43 - Propulsion Theory 3 *unit(s)*
- AVIA 68 - Avionics and Airborne Communication 3 *unit(s)*
- AVIA 73 - Air Traffic Control 3 *unit(s)*
- AVIA 91 - Aircraft Turbine Engines 3 *unit(s)*
- AVIA 110 - Aviation Weather 3 *unit(s)*
- AVIA 178 - Airport Planning and Management 3 *unit(s)*
- AVIA 193 - Aerodynamics 3 *unit(s)*
- AVIA 194 - Advanced Aircraft Systems 3 *unit(s)*
- Major Electives 7 *unit(s)*

Complete one course:

- AVIA 177 - General Aviation Operations and Management 3 *unit(s)*
- AVIA 179 - Advanced Airport Planning and Management 3 *unit(s)*
- AVIA 195 - Internship with the Aviation Industry 1-6 *unit(s)*

Professional Flight

Students in the Professional Flight option are required to select an affiliated flight school and earn three FAA pilot ratings. The costs of flight training are not included in the tuition at SJSU.

- AVIA 1 - Introduction to the Aviation Industry 3 *unit(s)*
- AVIA 2 - Private Pilot Ground 3 *unit(s)*
- AVIA 3 - Introduction to Private Pilot Part 141 Flight 2 *unit(s)*
- AVIA 31 - Aircraft Theory and Design 3 *unit(s)*
- AVIA 42 - Aircraft Systems 3 *unit(s)*
- AVIA 43 - Propulsion Theory 3 *unit(s)*
- AVIA 62 - Instrument Pilot Ground 3 *unit(s)*
- AVIA 63 - Instrument Rating Part 141 Flight 2 *unit(s)*

- AVIA 68 - Avionics and Airborne Communication 3 *unit(s)*
- AVIA 73 - Air Traffic Control 3 *unit(s)*
- AVIA 91 - Aircraft Turbine Engines 3 *unit(s)*
- AVIA 110 - Aviation Weather 3 *unit(s)*
- AVIA 112 - Commercial Pilot Ground 3 *unit(s)*
- AVIA 113 - Commercial Professional Pilot Part 141 Flight 2 *unit(s)*
- AVIA 193 - Aerodynamics 3 *unit(s)*
- Major Elective 1 *unit(s)*

Aviation Management

- AVIA 1 - Introduction to the Aviation Industry 3 *unit(s)*
- AVIA 31 - Aircraft Theory and Design 3 *unit(s)*
- AVIA 42 - Aircraft Systems 3 *unit(s)*
- AVIA 43 - Propulsion Theory 3 *unit(s)*
- AVIA 73 - Air Traffic Control 3 *unit(s)*
- AVIA 177 - General Aviation Operations and Management 3 *unit(s)*
- AVIA 178 - Airport Planning and Management 3 *unit(s)*
- AVIA 179 - Advanced Airport Planning and Management 3 *unit(s)*
- BUS1 170 - Fundamentals of Finance 3 *unit(s)*
- BUS5 146 - Fundamentals of Project Management 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- Major Elective 4 *unit(s)*

Requirements for Minor in Business (6 units)

- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*

Business Elective (3 units)

Complete one courses:

- BUS3 150 - Fundamentals of Human Resource Management 3 *unit(s)*
- BUS5 141 - Procurement and Supply Management 3 *unit(s)*
- BUS5 145 - Operations & Supply Chain Strategy 3 *unit(s)*
- BUS5 167 - Managing Environmental Issues 3 *unit(s)*
- BUS5 181 - Introduction to Entrepreneurship 3 *unit(s)*

Maintenance Management

Airframes and Powerplants (A&P) coursework (30 units)

In order to complete this option, a student must complete an AS-level FAA-approved maintenance programs at an accredited community college, such as those listed below, prior to beginning upper division coursework. See <http://avtech.sjsu.edu/departement> for more information.

SJSU Required Courses (13 units)

The following courses are completed at SJSU.

- BUS5 141 - Procurement and Supply Management 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ISE 155 - Supply Chain Engineering 3 *unit(s)*
- TECH 145 - Lean Manufacturing 3 *unit(s)*
- Major Elective 1 *unit(s)*

Total Units Required (120 units)

Biomedical Engineering, BS

The Department of Biomedical Engineering is home to dynamic BS and MS engineering programs. Being located in the heart of Silicon Valley, we have developed strong ties and long-standing collaborations with the wide variety of biomedical engineering industries that surround us. These include the spectrum from mature companies that are household names enjoying world-wide recognition to startups that are at the brink of the next revolution in technology. The reputation of our educational programs as providing a unique practical approach built on a strong academic foundation continues to attract students. The Biomedical Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Program Criteria and the Bioengineering and Biomedical and Similarly Named Engineering Programs Program Criteria.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	18
Major Preparation	45
Major Requirements	60
Total	123

Program Roadmaps

The 4-Year and 5-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your academic advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses required in the major, including all electives, must be completed with a grade of C- or better. This includes all courses in the following sections: Preparation for the Major, Requirements of the Major Core Courses, Biomedical Engineering Required Courses. Note that ENGR 100W, BME 198A, BME 198B, ENGR 195A, AND ENGR 195B must be completed with a grade of C or better.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (12 units)

Of the 39 units required by the university, 27 units may be satisfied by the coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with GE advisor at the Engineering Student Success Center (ESSC) for details.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by the coursework outlined below. Consult with GE advisor at the Engineering Student Success Center (ESSC) for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (45 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 8 - Organic Chemistry 3 *unit(s)*
- CHEM 9 - Organic Chemistry Lab 1 *unit(s)*
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 *unit(s)* (B4) (or MATH 30X)
- MATH 31 - Calculus II 4 *unit(s)* (B4) (or MATH 31X)
- MATH 32 - Calculus III 3 *unit(s)* (B4) (or MATH 32H or MATH 32X)
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Differential Equations (3 units)

- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
OR
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*

Major Requirements (60 units)

Core Courses (11 units)

- BME 25 - Introduction to Biomedical Engineering Design 2 *unit(s)*
- BME 65 - Biomedical Applications of Statics 3 *unit(s)* (*CE 95 or CE 99 also accepted*)
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (*E*)
- ENGR 100W - Engineering Reports 3 *unit(s)* (*WID+R*)

Major Courses (43 units)

- BME 68 - Biomedical Applications of Metals and Ceramics 3 *unit(s)* (*MATE 25 also accepted*)
- BME 115 - Foundations of Biomedical Engineering 4 *unit(s)*
- BME 116 - Biosensors and Bioinstrumentation 3 *unit(s)* (*EE 98 also accepted*)
- BME 117 - Biotransport Phenomena 3 *unit(s)*
- BME 130 - Numerical Methods in Biomedical Engineering 3 *unit(s)*
- BME 133 - Programming Applications in Biomedical Engineering 1 *unit(s)*
- BME 135 - Biomedical Engineering Design Methods 2 *unit(s)*
- BME 147 - Quantitative and Statistical Methods for Biomedical Engineers 3 *unit(s)*
- BME 165 - Applied Engineering Biomechanics 3 *unit(s)*
- BME 168 - Medical and Biological Polymers 3 *unit(s)*
- BME 174 - Biomedical Regulatory Requirements 3 *unit(s)*
- BME 177 - Physiology for Engineers 3 *unit(s)*
- BME 178 - Biomedical Product Realization 3 *unit(s)*
- BME 198A - Senior Design Project I 2 *unit(s)* (*S*)
- BME 198B - Senior Design Project II 2 *unit(s)* (*V*)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (*S*)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (*V*)

Technical Electives (6 units)

Electives must be selected from the approved departmental list in consultation with the student's academic advisor.

Total Units Required (123 units)

Chemical Engineering, BS

Chemical Engineers combine science with engineering technology to make an essential contribution to many industries, including biotechnology, semiconductor processing, environmental engineering, manufacturing and industrial chemicals. The Chemical Engineering degree also provides a strong foundation for graduate degrees in a range of disciplines. The Department of Chemical and Materials Engineering has excellent laboratory facilities for courses and student research.

The Chemical Engineering Program at SJSU is designed to provide a solid engineering foundation and then allow the student to develop some specialization in an area of interest. The Chemical Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Program Criteria and the Chemical, Biochemical, Biomolecular and Similarly Named Engineering Programs Program Criteria. The department also offers a combined Chemical Engineering BS + MS program.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	27
Major Preparation	31
Major Requirements	65
Total	123

Program Roadmaps

The 4-Year and 5-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

The following course in Preparation for the Major must be completed with a "C- or Better": ENGL 1B.

The following required courses in the Major Lower Division Core must be satisfied with a "C or better": PHYS 50, MATH 31, and MATH 32 or MATH 32X.

The CHE Sophomore and Junior Core consists of a 2.0 average in {CHE 110A, CHE 110B, CHE 115, CHE 151, CHE 160A, CHE 162 and CHE 190} and ENGR 100W. Students receiving a grade less than "C-" in any CHE Junior Core course will have to repeat the course(s). The Junior Core must be satisfied in order to enroll in Senior Core course(s).

The CHE Senior Core consists of {CHE 161L, CHE 163L, CHE 165A, CHE 165B, CHE 185, CHE 160B, and CHE 158}. Students receiving any grade less than "C-" in a Senior Core course(s) will have to repeat the courses. Students can repeat any ChE Junior or Senior Core course only once. Failure to pass any ChE Junior or Senior Core course with a grade of "C- or better" after the second attempt will result in disqualification from the ChE major.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the course descriptions for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Of the 39 units, the following 15 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1 Oral Communication (3 units)

- GE Area A2 Written Communication I (3 units)
- GE Area C1 Arts (3 units)
- GE Area C1 or C2 (3 units)
- GE Area F Ethnic Studies (3 units)

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 unit(s) (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 unit(s) (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 unit(s) (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 unit(s) (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (31 units)

- CHEM 1A - General Chemistry 5 unit(s) (B1+B3)
- CHEM 1B - General Chemistry 5 unit(s) (B1+B3)
- ENGL 1B - Argument and Analysis 3 unit(s) (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 unit(s) (B4) (or MATH 30X)
- MATH 31 - Calculus II 4 unit(s) (B4) (or MATH 31X)
- MATH 32 - Calculus III 3 unit(s) (B4) (or MATH 32H or MATH 32X)
- PHYS 50 - General Physics I: Mechanics 4 unit(s) (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 unit(s) (B1+B3)

Major Requirements (65 units)

Core Courses (16 units)

- CE 99 - Introductory Statics 2 unit(s) (CE 95 also accepted.)
- ENGR 10 - Introduction to Engineering 3 unit(s) (E)
- MATE 25 - Introduction to Materials 3 unit(s)
- CHEM 112A - Organic Chemistry 3 unit(s)
- CHEM 112B - Organic Chemistry 3 unit(s)
- CHEM 113A - Organic Chemistry Lab 2 unit(s)

Major Courses (40 units)

- ENGR 100W - Engineering Reports 3 unit(s) (WID+R)
- CHE 110A - Mathematical Methods in Chemical Engineering 2 unit(s) (Transfer students with MATH 33A (C- or better) or MATH 33LA (C- or better) may use these in lieu of CHE 110A.)
- CHE 110B - Computational Methods in Chemical Engineering 2 unit(s)
- CHE 115 - Industrial Chemical Calculations 3 unit(s)
- CHE 151 - Process Engineering Thermodynamics 4 unit(s)

- CHE 158 - Kinetics and Reactor Design 3 *unit(s)*
- CHE 160A - Unit Operations I 4 *unit(s)*
- CHE 160B - Unit Operations II 4 *unit(s)*
- CHE 161L - Undergraduate Chemical Engineering Laboratory 2 *unit(s)*
- CHE 162 - Engineering Statistics and Analysis 2 *unit(s)*
- CHE 163L - Undergraduate Chemical Engineering Laboratory II 2 *unit(s)*
- CHE 165A - Plant Design I 2 *unit(s)*
- CHE 165B - Plant Design II 2 *unit(s)*
- CHE 185 - Chemical Process Dynamics and Control 2 *unit(s)*
- CHE 190 - Introduction to Transport Phenomena 3 *unit(s)*

Technical Electives (9 units)

ABET required upper division chemistry (3 units)

- CHEM 130A - Biochemistry 4 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*
- CHEM 161A - Physical Chemistry 3 *unit(s)*

CHE Technical Electives (6 units)

Technical electives can be chosen from designated courses for breadth or focus in one of the four areas of Biochemical Engineering, Environmental Engineering, Semiconductor and Materials Processing, and Alternative Energy and Sustainability with advisor approval.

Total Units Required (123 units)

Civil Engineering, BS

Civil Engineers plan, design and supervise construction of buildings, roadways, bridges, water supply systems, communications networks and transportation systems. Using modern technology, they solve pollution and planning problems and tackle other engineering challenges. The Department of Civil and Environmental Engineering offers both Bachelor's and Master's degree programs. The Civil Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Civil and Similarly Named Engineering Programs Program Criteria. It includes course work in construction, environmental, geotechnical, structural, transportation and water resources engineering.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	30
Major Preparation	32
Major Requirements	58
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

The following course in Preparation for the Major must be completed with a "C- or better": ENGL 1B. Students must earn at least a 2.0 GPA in each Core: Mechanics Core, Foundational Core, Disciplinary Core and Breadth Core.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)

Major Preparation (32 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- GEOL 2 - Geology for Engineers 3 *unit(s)*
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)

- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Major Requirements (58 units)

Students must earn at least a 2.0 GPA in each Core: Mechanics Core, Foundational Core, Disciplinary Core and Breadth Core.

- CE 95 - Theory and Application of Statics 3 *unit(s)*
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)

Mechanics Core

Students must earn at least a 2.0 GPA.

- CE 112 - Mechanics of Materials 3 *unit(s)*
- ME 101 - Dynamics 3 *unit(s)*
- ME 111 - Fluid Mechanics 3 *unit(s)*

Foundational Core

Students must earn at least a 2.0 GPA.

- CE 8 - Plane Surveying 3 *unit(s)*
- CE 20 - Engineering Graphics, CAD and Programming 3 *unit(s)* (Taking both ME 20 and ME 30 can be used to satisfy CE 20.)
- CE 120 - Construction Materials Laboratory 1 *unit(s)*
- CE 130 - Civil Engineering Economic Analysis 2 *unit(s)*
- CE 190 - Numerical Solutions of Civil Engineering Problems 2 *unit(s)*
- CE 192 - Probabilistic Models for Civil Engineering Decisions 2 *unit(s)*

Disciplinary Core

Students must earn at least a 2.0 GPA.

- CE 121 - Transportation Engineering 3 *unit(s)*
- CE 131 - Introduction to Construction Engineering 3 *unit(s)*
- CE 140 - Geotechnical Engineering 3 *unit(s)*
- CE 150 - Introduction to Hydrology and Hydraulics 3 *unit(s)*
- CE 160 - Structural Analysis 3 *unit(s)*
- CE 170 - Principles of Environmental Engineering 3 *unit(s)*

Breadth Core

Students must earn at least a 2.0 GPA.

- CE 162 - Structural Concrete Design 3 *unit(s)*

- CE 181 - Civil Engineering Systems 3 *unit(s)*
- Two courses from Civil Engineering electives approved by a major advisor. One of the two Technical Electives must be a design course.

Total Units Required (120 units)

Computer Engineering, BS

The Bachelor of Science degree in Computer Engineering (CMPE), offered by the Department of Computer Engineering, goes beyond programming to include engineering methodologies and hands-on project experience. The program prepares students to become engineers, leaders and entrepreneurs. Course topics range from computer hardware design and embedded systems to software design and construction of real-time systems, virtual systems, and enterprise software. The curriculum integrates concepts and hands-on practice using the latest developments in emerging technologies, design, verification, implementation, and computer systems applications to provide students with advanced hardware and software skills.

High-tech companies seek out our graduates. Our alumni work in hardware/software analysis, design and verification, hardware/software co-design, systems software, domain applications and product testing at many Silicon Valley firms from start-ups to Fortune 100 companies. The Computer Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Engineering Programs Program Criteria.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	24
Major Preparation	33
Major Requirements	66
Total	123

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in Major (all courses in preparation, core, and concentration) must be completed with a grade of "C- or better". The following Preparation for the Major courses must be completed with a grade of "C or better": MATH 30, MATH 31, PHYS 50 and PHYS 51. CMPE 195A/CMPE 195B and ENGR 195A/ENGR 195B must be completed with C or Better to meet GE Area requirements.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions,

Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Of the 39 units, the following 15 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1- Oral Communication 3 *units*
- GE Area A2 - Written Communication I 3 *units*
- GE Area C1 - Arts 3 *units*
- GE Area C1 or C2 3 *units*
- GE Area F - Ethnic Studies 3 *units*

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

This requirement is fulfilled in this major with:

- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)

Major Preparation (33 units)

Students must complete the following courses with "C" or better to graduate: MATH 30, MATH 31, PHYS 50, PHYS 51. The remaining courses in Preparation for the Major must be completed with "C-" or better to graduate.

- BIOL 10 - The Living World 3 *unit(s)* (B2)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 42 - Discrete Mathematics 3 *unit(s)*
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Major Requirements (66 units)

Students must complete all the courses in Core Courses, Required Courses and Approved Upper Division Electives sections with "C-" or better to graduate.

Core Courses (13 units)

- CMPE 30 - Programming Concepts and Methodology 3 unit(s)
- CMPE 50 - Object-Oriented Concepts and Methodology 3 unit(s)
- ENGR 10 - Introduction to Engineering 3 unit(s) (E)
- EE 97 - Introductory Electrical Engineering Laboratory 1 unit(s)
- EE 98 - Introduction to Circuit Analysis 3 unit(s)

Required Courses (46 units)

Note: Must complete CMPE 195A/CMPE 195B and ENGR 195A/ENGR 195B with C or Better to meet GE Area requirements.

- CMPE 102 - Assembly Language Programming 3 unit(s)
- CMPE 110 - Electronics for Computing Systems 3 unit(s)
- CMPE 124 - Digital Design I 3 unit(s)
- CMPE 125 - Digital Design II 3 unit(s)
- CMPE 126 - Algorithms and Data Structure Design 3 unit(s)
- CMPE 127 - Microprocessor Design I 3 unit(s)
- CMPE 130 - Advanced Algorithm Design 3 unit(s)
- CMPE 131 - Software Engineering I 3 unit(s)
- CMPE 140 - Computer Architecture and Design 3 unit(s)
- CMPE 142 - Operating Systems Design 3 unit(s)
- CMPE 146 - Real-Time Embedded System Co-Design 3 unit(s)
- CMPE 148 - Computer Networks I 3 unit(s)
- CMPE 152 - Compiler Design 3 unit(s)
- CMPE 195A - Senior Design Project I 2 unit(s) (S)
- CMPE 195B - Senior Design Project II 3 unit(s) (V)
- ENGR 195A - Global and Social Issues in Engineering 1 unit(s) (S)
- ENGR 195B - Global and Social Issues in Engineering 1 unit(s) (V)

Approved Upper Division Electives (7 units)

Selected in consultation with the student's advisor

Total Units Required (123 units)

Electrical Engineering, BS

The Department of Electrical Engineering at San José State University is a leading provider of engineering talent to Silicon Valley's high-tech industry. Our curriculum is designed to prepare our graduates for the dynamic global society. A very highly qualified and dedicated EE faculty is the strength of the department. The state-of-the-art laboratories, sponsored by industry, provide opportunities for our students to prepare for their profession. The Electrical Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation

Commission of ABET, under the General Program Criteria and the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Engineering Programs Program Criteria. The department also offers a combined Electrical Engineering BS + MS program.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	21
Major Preparation	33
Major Requirements	69
Total	123

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All required courses in Engineering, Mathematics, and Physics require a "C-" or better to graduate.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Of the 39 units, the following 15 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1 - Oral Communication 3 *units*
- GE Area A2 - Written Communication I 3 *units*
- GE Area C1 - Arts 3 *units*
- GE Area C1 or C2 3 *units*
- GE Area F - Ethnic Studies 3 *units*

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (33 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 *unit(s)* (B4) (or MATH 30X)
- MATH 31 - Calculus II 4 *unit(s)* (B4) (or MATH 31X)
- MATH 32 - Calculus III 3 *unit(s)* (B4) (or MATH 32H or MATH 32X)
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)

Major Requirements (69 units)

Core Courses (13 units)

- EE 30 - Introduction to Programming Micro-Controllers for Electrical Engineering 3 *unit(s)* (CMPE 30 taken at SJSU is also accepted, but courses equivalent to CMPE 30 taken at other colleges/universities are not accepted.)
- EE 97 - Introductory Electrical Engineering Laboratory 1 *unit(s)*
- EE 98 - Introduction to Circuit Analysis 3 *unit(s)*
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)

Major Courses (44 units)

The 1-unit ENGR 195A and ENGR 195B courses must be concurrently enrolled with the required EE 198A and EE 198B courses, respectively.

- EE 102 - Probability and Statistics in Electrical 3 *unit(s)*
- EE 110 - Circuits and Systems 3 *unit(s)*
- EE 110L - Continuous and Discrete Time Systems Lab 1 *unit(s)*
- EE 112 - Introduction to Signal Processing 3 *unit(s)*
- EE 118 - Digital Logic Circuit Design 4 *unit(s)*
- EE 120 - Microprocessor Based System Design 4 *unit(s)*
- EE 122 - Electronic Design I 4 *unit(s)*
- EE 124 - Electronic Design II 4 *unit(s)*
- EE 128 - Physical Electronics 3 *unit(s)*
- EE 132 - Theory of Automatic Controls 3 *unit(s)* **OR** EE 160 - Principles of Communication Systems 3 *unit(s)*
- EE 140 - Principles of Electromagnetic Fields 3 *unit(s)*
- EE 198A - Senior Design Project I 1 *unit(s)* (S)

- EE 198B - Senior Design Project II 3 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)
- MATE 153 - Electronic, Optical, and Magnetic Properties of Materials 3 *unit(s)*

Upper Division Electrical Engineering Electives (12 units)

With preapproval by the Electrical Engineering (EE) Major Advisor, students can take one (1) 3 unit upper division course from another engineering program OR one (1) 3 unit graduate level EE elective course (except EE 210, EE 221, EE 250, EE 275) to substitute for 3 units of upper division EE elective.

Matriculated EE students should visit the EE department website (www.sjsu.edu/ee/) for department policies in course transfers, major probation and major disqualifications.

Total Units Required (123 units)

Engineering Technology, Computer Network System Management (CNSM) Concentration, BS

The Bachelor of Science in Engineering Technology with a concentration in Computer Network System Management (CNSM), offered by the Department of Aviation and Technology, is designed to prepare graduates for the ever-increasing employment opportunities in the field of Computer Network Systems and Management. You will gain knowledge, skills, and practical experiences in the Internet of Things (IoT), network theory and administration, wireless communication, network security and prevention management, and cybersecurity management.

The computer network professional plans for implementation of systems, maintains the software and hardware, monitors the system for potential disturbances, analyzes problems, and develops plans for potential solutions. A computer network specialist professional is a problem solver who assures the network system is operational, secure, and protected at all times against cyber-attacks.

Computer and networking professionals are employed to facilitate the exchange and use of data in an organization in furtherance of organization goals. They also protect individuals, companies, and government organizations and their information throughout the enterprise. This requires that such professionals be knowledgeable about and familiar with constantly changing technologies and security processes. The major priority of the computer networking specialist professional is the day-to-day support that keeps the network functioning and secure.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	27
Major Preparation	22
Major Core Requirements	21
Concentration Requirements	30
Technical Elective	3
Minor Requirements	15

University Electives 2

Total 120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in the Major and required Business Minor (all courses in preparation, core, and concentration and minor) must be completed with a grade of "C- or better", with the exception of ENGR 100W which must be completed with a "C" or better.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by courses outlined below and approved waivers. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details. Of the 39 units, the following 21 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1 Oral Communications 3 units
- GE Area A2 Written Communication 3 units
- GE Area A3 Critical Thinking 3 units
- GE Area C1 Arts 3 units
- GE area C2 Letters 3 units
- GE Area C1 or C2 3 units
- GE Area F Ethnic Studies 3 units

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (22 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- TECH 30 - Introduction to Python Programming 3 *unit(s)*
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (B4) (*MATH 30 or MATH 30X may be used in lieu of MATH 71*)

Complete one Physics sequence:

- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- OR
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3) (*Students may use PHYS 2B instead of PHYS 51*)

Major Requirements (54 units)

To qualify for a baccalaureate degree in Engineering Technology with a concentration in Computer Network System Management, students must earn a grade of "C-" or better in each major and preparation course. ENGR 100W requires a C or better.

Core (21 units)

- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- TECH 60 - Introduction to Electronics 3 *unit(s)*
- TECH 65 - Introduction to Networks 3 *unit(s)*
- TECH 145 - Lean Manufacturing 3 *unit(s)*
- TECH 190A - Senior Project I 3 *unit(s)*
- TECH 190B - Senior Project II 3 *unit(s)*
- TECH 198 - Technology and Civilization 3 *unit(s)* (V)

Computer Network System Management (CNSM) Concentration (30 units)

- TECH 63 - Analog and Digital Circuits 3 *unit(s)*
- TECH 66 - Network Administration 3 *unit(s)*
- TECH 67 - Introduction to Internet of Things 3 *unit(s)*
- TECH 68 - Internet of Things Systems 3 *unit(s)*
- TECH 136 - Software Quality Management 3 *unit(s)*
- TECH 165 - Wireless Communications Technologies 3 *unit(s)*
- TECH 170 - Connected Products Applications 3 *unit(s)*
- TECH 171 - Network Security & Prevention Management 3 *unit(s)*

- TECH 173 - Cloud Computing System Management 3 *unit(s)*
- TECH 179 - Cyber Security System Management 3 *unit(s)*

Technical Elective (3 units)

Complete three units from any advisor approved upper division TECH or ENGR courses

Business Minor (15 units)

(required for this major)

- BUS1 20 - Financial Accounting 3 *unit(s)* OR BUS1 20N - Survey of Accounting 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (or equivalent)
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS3 186 - Professional and Business Ethics 3 *unit(s)* (S)

Complete One Course From:

- BUS5 141 - Procurement and Supply Management 3 *unit(s)*
- BUS5 142 - Total Quality Management 3 *unit(s)*
- BUS5 145 - Operations & Supply Chain Strategy 3 *unit(s)*

University Electives (2 unit)

Total Units Required (120 units)

Engineering Technology, Manufacturing Systems Concentration, BS

The Bachelor of Science in Engineering Technology with a concentration in Manufacturing Systems, offered by the Department of Aviation and Technology, is designed to prepare students for technical and management careers in business and industry. Manufacturing Systems prepares you for a career in manufacturing design and management. You will gain knowledge, skills, and practical experiences in innovative manufacturing processes and management, sustainable product design, and sustainable automation and robotics manufacturing practices.

This dynamic and expanding field applies computer design tools and other advanced technologies to the solving of problems in manufacturing systems. A new, strong emphasis on smart manufacturing design practices and sustainable operations will add to your basic and advanced manufacturing design knowledge.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	30
Major Preparation	22
Major Core Requirements	21

Concentration Requirements	30
Technical Elective	1
Minor Requirements	15
University Elective	1
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in the Major and required Business Minor (all courses in preparation, core, concentration, and minor) must be completed with a grade of "C- or better", with the exception of ENGR 100W which must be completed with a "C" or better.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements will apply to this major.

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by courses outlined below and approved waivers. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details. Of the 39 units, the following 21 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1 Oral Communications *3 units*
- GE Area A2 Written Communication *3 units*
- GE Area A3 Critical Thinking *3 units*
- GE Area C1 Arts *3 units*
- GE Area C2 Letters *3 units*
- GE Area C1 or C2 *3 units*
- GE Area F Ethnic Studies *3 units*

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (22 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- TECH 30 - Introduction to Python Programming 3 *unit(s)*
- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (B4) (*MATH 30 or MATH 30X may be used in lieu of MATH 71*)
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)

Complete one Physics sequence:

- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- **OR**
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3) (*Students may use PHYS 2B instead of PHYS 51*)

Major Requirements (52 units)

Core (21 units)

- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- TECH 60 - Introduction to Electronics 3 *unit(s)*
- TECH 65 - Introduction to Networks 3 *unit(s)*
- TECH 145 - Lean Manufacturing 3 *unit(s)*
- TECH 190A - Senior Project I 3 *unit(s)*
- TECH 190B - Senior Project II 3 *unit(s)*
- TECH 198 - Technology and Civilization 3 *unit(s)* (V)

Manufacturing Systems Concentration (30 units)

- TECH 20A - Computer-Aided-Graphics 2 *unit(s)*
- TECH 25 - Introduction to Materials Science and Technology 3 *unit(s)*
- TECH 31 - Quality Assurance and Control 3 *unit(s)*
- TECH 41 - Machine Shop Operations and Safety 1 *unit(s)*
- TECH 45 - Facilities Design & Planning 3 *unit(s)*
- TECH 46 - Machine Operations and Management 3 *unit(s)*

- TECH 115 - Automation and Robotics 3 *unit(s)*
- TECH 140 - Product Design and Prototyping 3 *unit(s)*
- TECH 143 - Polymers and Composites Fabrication Technology 3 *unit(s)*
- TECH 147 - Manufacturing Analysis & Management 3 *unit(s)*
- TECH 149 - Smart Manufacturing 3 *unit(s)*

Technical Elective (1 unit)

Complete one unit from any advisor approved upper division TECH or ENGR courses

Business Minor (15 units)

(required for this major)

- BUS1 20N - Survey of Accounting 3 *unit(s)* OR BUS1 20 - Financial Accounting 3 *unit(s)*
- BUS2 90 - Business Statistics 3 *unit(s)* (or equivalent)
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*
- BUS3 186 - Professional and Business Ethics 3 *unit(s)* (S)

Complete One Course From:

- BUS5 141 - Procurement and Supply Management 3 *unit(s)*
- BUS5 142 - Total Quality Management 3 *unit(s)*
- BUS5 145 - Operations & Supply Chain Strategy 3 *unit(s)*

University Elective (1 unit)

Total Units Required (120 units)

Industrial and Systems Engineering, BS

The BS Industrial and Systems Engineering program, offered by the Department of Industrial and Systems Engineering, prepares engineers for a broad scope of systems analysis and design challenges that deal with improving the overall performance of an organization or system. The Industrial and Systems Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Industrial and Similarly Named Engineering Programs Program Criteria.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	24
Major Preparation	29
Major Requirements	67

Total

120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

ISE 130 must be completed with a "C-" or better. ISE 195A and ISE 195B must be completed with a "C" or better. All Technical Electives Required in the Major must be completed with a "C-" or better. The following courses in Preparation for the Major must also be completed with a "C-" or better: ENGL 1B.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements will apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (29 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)

- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Major Requirements (67 units)

ISE 130 must be completed with a "C-" or better. ISE 195A and ISE 195B must be completed with a "C" or better. At least one approved technical elective must be an engineering course and all technical electives must be completed with a grade of "C-" or better.

Core Courses (11 units)

- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- ME 20 - Design and Graphics 2 *unit(s)*
- MATE 25 - Introduction to Materials 3 *unit(s)*
- CMPE 30 - Programming Concepts and Methodology 3 *unit(s)*

Major Courses (50 units)

- ISE 102 - Engineering Economic Systems 3 *unit(s)*
- ISE 105 - Introduction to Systems Engineering 3 *unit(s)*
- ISE 115 - Lean Integrated Manufacturing 3 *unit(s)*
- ISE 120 - Work Methods Design and Measurement 3 *unit(s)*
- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- ISE 131 - Statistical Process Control and Improvement 3 *unit(s)*
- ISE 135 - Design of Experiments 3 *unit(s)*
- ISE 140 - Operations Planning and Control 3 *unit(s)*
- ISE 142 - Service Systems Engineering and Management 3 *unit(s)*
- ISE 151 - Engineering Management Systems in Global Society 3 *unit(s)* (V)
- ISE 155 - Supply Chain Engineering 3 *unit(s)*
- ISE 167 - System Simulation 3 *unit(s)*
- ISE 170 - Operation Research 3 *unit(s)*
- ISE 194 - Analytics Workshop 1 *unit(s)*
- ISE 195A - Senior Industrial Engineering Design I 1 *unit(s)*
- ISE 195B - Senior Industrial Engineering Design II 3 *unit(s)*
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- CMPE 131 - Software Engineering I 3 *unit(s)*

Approved Technical Electives (6 units)

Selected from the approved departmental list in consultation with the student's advisor.

Total Units Required (120 units)

Interdisciplinary Engineering, BS

The Bachelor of Science Interdisciplinary Engineering (formerly General Engineering), offered by the Interdisciplinary Engineering Program, is an interdisciplinary, broadly focused, and customizable program. The program is intended

for students interested in developing engineering skills and knowledge applied across different fields of study or emerging technologies. In the BSIDE curriculum, the first two years focus on courses in math, science and general education areas similar to that of other engineering curricula, but may include prerequisite courses required for upper division studies. The second two years include required engineering depth and breadth elective courses. Students can select one of the pre-approved engineering depth 4-course sequences (12 units) from an engineering program in the college or from a 4-course focused STEM sequence. Two technical elective courses (6 units) can be chosen from other engineering programs or for supplementing the chosen depth courses or meeting the prerequisite courses for a minor. The academic breadth or minor requirement (12 units) allows students to take approved courses based on their career goal or pursue a minor degree, such as: Innovation and Law, Business, Computer Science, Bioinformatics, Green Engineering or Applied Computing for Behavioral and Social Scientists.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	21
Major Preparation	30
Major Core Requirements	12
Interdisciplinary Courses	28
Technical Focus	18
Academic Breadth or Minor	12
Total	121

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

The following courses in Preparation for the Major must be completed with a "C- or better": ENGL 1B.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Of the 39 units, the following 15 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1 - Oral Communication 3 *units*
- GE Area A2 - Written Communication I 3 *units*
- GE Area C1 - Arts 3 *units*
- GE Area C1 or C2 3 *units*
- GE Area F 3 *units*

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 unit(s) (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 unit(s) (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 unit(s) (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 unit(s) (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (30 units)

- BIOL 10 - The Living World 3 unit(s) (B2)
- CHEM 30A - Introductory Chemistry 3 unit(s) (B1+B3)
or CHEM 1A may be used in lieu of CHEM 30A.
- ENGL 1B - Argument and Analysis 3 unit(s) (C2)
or equivalent second semester composition course.
- MATH 30 - Calculus I 3 unit(s) (B4)
or MATH 30X may be used instead of MATH 30.
- MATH 31 - Calculus II 4 unit(s) (B4)
or MATH 31X may be used instead of MATH 31.
- MATH 32 - Calculus III 3 unit(s) (B4)
or MATH 32X may be used instead of MATH 32.
- PHYS 50 - General Physics I: Mechanics 4 unit(s) (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 unit(s) (B1+B3)

Differential Equations or Discrete Math (3 units)

Complete one course:

- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 unit(s)
- MATH 33LA - Differential Equations and Linear Algebra 3 unit(s)
- MATH 42 - Discrete Mathematics 3 unit(s)

Major Requirements (58 units)

Core Courses (12 units)

- CMPE 30 - Programming Concepts and Methodology 3 unit(s) OR CS 46A - Introduction to Programming) 4 unit(s)
- EE 98 - Introduction to Circuit Analysis 3 unit(s)

- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)

Mechanics (3 units)

Complete one course:

- CE 95 - Theory and Application of Statics 3 *unit(s)*
- MATE 25 - Introduction to Materials 3 *unit(s)*

Interdisciplinary Courses (28 units)

Complete the required courses:

- BUS3 186 - Professional and Business Ethics 3 *unit(s)* (S)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- ENGR 102 - Renewable Energy Engineering 3 *unit(s)*
- ENGR 120 - Programming Concepts for Behavioral and Social Science Applications 3 *unit(s)* OR CS 46B - Introduction to Data Structures 4 *unit(s)*
- ENGR 130 - Introduction to Intellectual Property for Engineers 3 *unit(s)*
- ENGR 199A - Senior Design Project I 1 *unit(s)*
- ENGR 199B - Senior Design Project II 2 *unit(s)*
- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- ME 106 - Fundamentals of Mechatronics Engineering 4 *unit(s)*
- TECH 198 - Technology and Civilization 3 *unit(s)* (V)

Technical Focus (18 units)

Must be approved by the advisor.

Engineering or STEM Depth of four course sequence (12 units)

Technical Electives (6 units)

Academic Breadth or Minor (12 units)

Must be approved by the advisor.

Total Units Required (121 units)

Interdisciplinary Engineering, BS (SJSU Online) (Currently Not Accepting Students)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

Our curriculum for the Degree Completion Program covers three primary areas - engineering management and statistical quality engineering, applied computing, and innovation and law. All three areas are applicable to a wide range of engineering and business practices, provide the skills and knowledge that serve existing and emerging technologies, and can provide a competitive advantage for students interested in opportunities in Interdisciplinary Engineering.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times convenient for the working learner).

Summary of Degree Units

Transfer Units	63
Interdisciplinary Courses	28
Technical Focus	18
Academic Breadth or Minor	12
Total	121

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (63 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better. However, 63 units of lower division may be completed at the community college.
- Applicants must also have completed the Core Lower Division General Education Requirements, except for GE Area A3 which is waived for this degree (36 units). Of the 36 units, 15 units are fulfilled by math, science, engineering, and second semester composition courses listed below.
- GE Area A3 (Critical Thinking/Logic) is waived for this degree. The remaining three CSU-approved Basics Skills courses must be completed with a C- or better for admission:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
- GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.

- Completion of at least 29 units of the Math and Science courses (or equivalents)
 - BIOL 10 - The Living World 3 *unit(s)* (B2+B3)
 - CHEM 30A - Introductory Chemistry 3 *unit(s)* (or CHEM 1A or CHEM 1B) (B1+B3)
 - MATH 30 OR MATH 30X - Calculus I 3 *unit(s)* (B4)
 - MATH 31 OR MATH 31X - Calculus II 4 *unit(s)* (B4)
 - MATH 32 OR MATH 32X - Calculus III 3 *unit(s)* (B4)
 - MATH 33A - Ordinary Differential Equations for SCI & ENGR OR MATH 33LA - Differential Equations and Linear Algebra OR MATH 42 - Discrete Mathematics 3 *unit(s)*
 - PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
 - PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

- Completion of at least 12 units of the Engineering courses (or equivalents):
 - CMPE 30 - Programming Concepts and Methodology 3 *unit(s)* OR CS 46A - Introduction to Programming 4 *unit(s)*
 - EE 98 - Introduction to Circuit Analysis 3 *unit(s)*
 - ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
 - MATE 25 - Introduction to Materials OR CE 95 - Theory and Application of Statics 3 *unit(s)*

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements, except for GE Area A3 which is waived for this degree, (36 units) must be completed before transferring from a community college or any university.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (58 units)

Interdisciplinary Courses (28 units)

Complete the required courses:

- BUS3 186 - Professional and Business Ethics 3 unit(s) (S)
- ENGR 100W - Engineering Reports 3 unit(s) (WID+R)
- ENGR 102 - Renewable Energy Engineering 3 unit(s)
- ENGR 120 - Programming Concepts for Behavioral and Social Science Applications 3 unit(s)
- ENGR 199A - Senior Design Project I 1 unit(s)
- ENGR 199B - Senior Design Project II 2 unit(s)
- ISE 102 - Engineering Economic Systems 3 unit(s)
- ISE 130 - Engineering Probability and Statistics 3 unit(s)
- ME 106 - Fundamentals of Mechatronics Engineering 4 unit(s)
- TECH 198 - Technology and Civilization 3 unit(s) (V)

Technical Focus (18 units)

Engineering Four Course Sequence (12 units)

- ISE 120 - Work Methods Design and Measurement 3 unit(s)
- ISE 131 - Statistical Process Control and Improvement 3 unit(s)
- ISE 140 - Operations Planning and Control 3 unit(s)
- ISE 151 - Engineering Management Systems in Global Society 3 unit(s)

Technical Electives (6 units)

- ENGR 121 - Data Structures and Algorithms for Behavioral and Social Science Applications 3 unit(s)
- ENGR 122 - Data Technology for Behavioral and Social Science Applications 3 unit(s)

Academic Breadth (12 units)

- ENGR 130 - Introduction to Intellectual Property for Engineers 3 *unit(s)*
- ENGR 131 - Introduction to Patents for Engineers 3 *unit(s)*
- ENGR 195E - Interdisciplinary Computing Project 3 *unit(s)*
- PHIL 137 - Puzzles in Innovation and Law 3 *unit(s)*

Total Units Required (121 units)

Materials Engineering, BS

Materials Engineers design, characterize, and manufacture the "stuff" of our everyday world. Semiconductors, metals, polymers, ceramics, and composites are examples of the materials used to make everything around you - from your computer to the chair you are sitting in, from artificial body parts to the skin of the space shuttle. Materials scientists and engineers work in nanotechnology, biotechnology, aerospace, alternative energy, microelectronics and virtually every industry sector.

Major areas of study are the relationships between materials' structure, properties, processing, and performance. The MatE program, offered by the Department of Chemical and Materials Engineering, stresses the roles of design, development, and process engineering, and also prepares the exceptional student for research and graduate study. The Department has excellent laboratory facilities for courses and student research.

The Materials Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, <https://www.abet.org>, under the General Program Criteria and the Materials (1), Metallurgical (2), Ceramics (3) and Similarly Named Engineering Programs Program Criteria. The department also offers a combined Materials Engineering BS + MS program.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	21
Major Preparation	33
Major Requirements	66
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

The following course in Preparation for the Major must be completed with a "C- or Better": ENGL 1B.

The following required in the Major Lower Division Core must be satisfied with a "C- or Better": MATH 30, MATH 31, MATH 32, CHE 110A, PHYS 50, PHYS 51, CHEM 1A, CHEM 1B, CE 99 (or CE 95), ME 20, MATE 25, and ENGR 10.

The MATE Junior Core consists of a 2.0 average in {MATE 115, MATE 141, MATE 151, MATE 153, MATE 154 and MATE 155} and ENGR 100W. Students receiving a grade less than "C-" in a Junior Core course may have to repeat the course. The Junior Core must be satisfied in order to enroll in Senior Core courses.

The MATE Senior Core consists of {MATE 186, MATE 195, MATE 198A, MATE 198B, MATE 185, and MATE 152}. Students receiving a grade less than "C-" in a senior core course will have to repeat the course before graduation.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the course descriptions for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Of the 39 units, the following 15 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1 - Oral Communication (3 units)
- GE Area A2 - Written Communication I (3 units)
- GE Area C1 - Arts (3 units)
- GE Area C1 or C2 (3 units)
- GE Area F - Ethnic Studies (3 units)

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 unit(s) (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 unit(s) (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (33 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 *unit(s)* (B4) (or MATH 30X)
- MATH 31 - Calculus II 4 *unit(s)* (B4) (or MATH 31X)
- MATH 32 - Calculus III 3 *unit(s)* (B4) (or MATH 32H or MATH 32X)
- CHE 110A - Mathematical Methods in Chemical Engineering 2 *unit(s)*

- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Major Requirements (66 units)

Core Courses (11 units)

- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- MATE 25 - Introduction to Materials 3 *unit(s)*
- CE 99 - Introductory Statics 2 *unit(s)* (CE 95 also accepted.)

Major Courses (46 units)

- CHE 110B - Computational Methods in Chemical Engineering 2 *unit(s)*
- CHE 161 - Process Safety and Engineering Ethics 1 *unit(s)*
- CHE 162 - Engineering Statistics and Analysis 2 *unit(s)*
- MATE 115 - Structure/Properties of Solids 3 *unit(s)*
- MATE 141 - Structure and Analysis of Materials 3 *unit(s)*
- MATE 146 - Experimental Methods in Materials Characterization 3 *unit(s)*
- MATE 151 - Solid State Thermodynamics 3 *unit(s)*
- MATE 152 - Solid State Kinetics 3 *unit(s)*
- MATE 153 - Electronic, Optical, and Magnetic Properties of Materials 3 *unit(s)*
- MATE 154 - Metals and Alloys 3 *unit(s)*
- MATE 155 - Materials Selection and Process Design 3 *unit(s)*
- MATE 185 - Ceramics 3 *unit(s)*
- MATE 186 - Polymers 3 *unit(s)*
- MATE 195 - Mechanical Behavior of Materials 3 *unit(s)*
- MATE 198A - Senior Design Project 2 *unit(s)* (S)
- MATE 198B - Senior Design Project 2 *unit(s)* (V)
- ME 20 - Design and Graphics 2 *unit(s)*
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)

Technical Electives (9 units)

Electives must be selected from the approved departmental list in consultation with the students' advisor.

Total Units Required (120 units)

Mechanical Engineering, BS

The Department of Mechanical Engineering at San José State University is the major provider of engineering talent to Silicon Valley's high-tech and cross-disciplinary industries. Our curriculum is designed to prepare our graduates for the future needs of society. The department is supported by its world class faculties, state-of-the-art laboratories--sponsored by industry--and an integrated network of professionals and alumni who provide opportunities for our

students to prepare and succeed in their career. The Mechanical Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Mechanical and Similarly Named Engineering Programs Program Criteria.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	21
Major Preparation	33
Major Requirements	71
Total	125

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses required in the major (all courses in preparation for the major, core, required, capstone, and technical electives) must be completed with a grade of "C- or better". The following course in Major Requirements must be completed with a "C or better": ENGR 100W. The following required courses must be completed with a C average or better to earn S and V credit: ME 195A, ME 195B, ENGR 195A, ENGR 195B.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Of the 39 units, the following 15 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1 - Oral Communication 3 *unit(s)*
- GE Area A2 - Written Communication I 3 *unit(s)*
- GE Area C1 - Arts 3 *unit(s)*
- GE Area C1 or C2 3 *unit(s)*
- GE Area F - Ethnic Studies 3 *unit(s)*

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (33 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)

Major Requirements (71 units)

Core Courses (18 units)

- CE 95 - Theory and Application of Statics 3 *unit(s)*
- EE 98 - Introduction to Circuit Analysis 3 *unit(s)*
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- MATE 25 - Introduction to Materials 3 *unit(s)*
- ME 20 - Design and Graphics 2 *unit(s)*
- ME 30 - Computer Applications 3 *unit(s)*
- ME 41 - Machine Shop Operations and Safety 1 *unit(s)*

Major Courses (44 units)

- CE 112 - Mechanics of Materials 3 *unit(s)*
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- ME 101 - Dynamics **OR** ME 101H - Honors Dynamics 3 *unit(s)*
- ME 106 - Fundamentals of Mechatronics Engineering 4 *unit(s)*
- ME 111 - Fluid Mechanics 3 *unit(s)*
- ME 113 - Thermodynamics 4 *unit(s)*
- ME 114 - Heat Transfer 3 *unit(s)*
- ME 115 - Thermal Engineering Laboratory 1 *unit(s)*
- ME 120 - Experimental Methods 2 *unit(s)*
- ME 130 - Applied Engineering Analysis 3 *unit(s)*
- ME 147 - Dynamic Systems Vibration and Control 3 *unit(s)*

- ME 154 - Mechanical Engineering Design 4 *unit(s)*
- ME 195A - Senior Design Project I 3 *unit(s)* (S)
- ME 195B - Senior Design Project II 3 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)

Required Capstone Courses (3 units)

Complete one course from:

- ME 157 - Mechanical System Design 3 *unit(s)*
- ME 182 - Thermal Systems Design 3 *unit(s)*
- ME 190 - Mechatronics System Design 3 *unit(s)*

Technical Electives (6 units)

Technical electives can be chosen from designated courses for breadth or focus in one of the three areas of mechanical design, mechatronics, or thermal/fluids, with advisor approval.

Total Units Required (125 units)

Software Engineering, BS

The Bachelor of Science degree in Software Engineering (BSSE), offered by the Department of Computer Engineering, goes beyond programming to include engineering methodologies and hands-on project experience. The program prepares students to become qualified engineers for IT leading companies in Silicon Valley and international engineering market by providing them with state-of-the-art engineering methods, emergent technologies, team work experience, and solutions so they are capable to address design, coding, validation, and measurement issues for the construction of large-scale computer systems and software applications in the real world. The Software Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Software and Similarly Named Engineering Programs Program Criteria.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	24
Major Preparation	33
Major Requirements	66
Total	123

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in Major (all courses in preparation, core, and concentration) must be completed with a grade of "C- or better". The following Preparation for the Major courses must be completed with a grade of "C or better": MATH 30, MATH 31, and PHYS 50. CMPE 195A/CMPE 195B and ENGR 195A/ENGR 195B must be completed with C or better to meet GE Area requirements

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details. Of the 39 units, the following 15 units are not satisfied by the major or the American Institutions courses outlined below:

- GE Area A1 - Oral Communication 3 *units*
- GE Area A2 - Written Communication I 3 *units*
- GE Area C1 - Arts 3 *units*
- GE Area C1 or C2 3 *units*
- GE Area F - Ethnic Studies 3 *units*

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)

Major Preparation (33 units)

Students must complete the following courses with "C" or better to graduate: MATH 30, MATH 31, PHYS 50. The remaining courses in Preparation for the Major must be completed with "C-" or better to graduate.

- BIOL 10 - The Living World 3 *unit(s)* (B2)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)

- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 42 - Discrete Mathematics 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Complete One Course From:

- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- MATH 142 - Introduction to Combinatorics 3 *unit(s)*

Complete One Course From:

- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*

Major Requirements (66 units)

Students must complete all the courses in Core Courses, Required Courses and Approved Upper Division Electives sections with "C-" or better to graduate.

Core Courses (11 units)

- CS 46A - Introduction to Programming 4 *unit(s)*
- CS 46B - Introduction to Data Structures 4 *unit(s)*
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)

Major Courses (49 units)

Note: Must Complete CMPE 195A/CMPE 195B and ENGR 195A/ENGR 195B with C or Better to meet GE Area requirements

- CMPE 102 - Assembly Language Programming 3 *unit(s)*
- CMPE 120 - Computer Organization and Architecture 3 *unit(s)*
- CMPE 131 - Software Engineering I 3 *unit(s)*
- CMPE 133 - Software Engineering II 3 *unit(s)*
- CMPE 148 - Computer Networks I 3 *unit(s)*
- CMPE 165 - Software Engineering Process Management 3 *unit(s)*
- CMPE 172 - Enterprise Software Platforms 3 *unit(s)*
- CMPE 187 - Software Quality Engineering 3 *unit(s)*
- CMPE 195A - Senior Design Project I 2 *unit(s)* (S)
- CMPE 195B - Senior Design Project II 3 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)
- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 149 - Operating Systems 3 *unit(s)*
- CS 151 - Object-Oriented Design 3 *unit(s)*

- CS 157A - Introduction to Database Management Systems 3 *unit(s)*
- CS 166 - Information Security 3 *unit(s)*
- ISE 164 - Computer and Human Interaction 3 *unit(s)*

Approved Upper Division Electives (6 units)

Selected in consultation with the student's advisor

Total Units Required (123 units)

Undergraduate Minor(s)

Aerospace Engineering Minor

The Minor in Aerospace Engineering, offered by the Department of Aerospace Engineering, introduces non-majors to aerospace engineering applications and in particular to the basic principles of the fundamental aerospace engineering disciplines, such as aerodynamics, aerospace structures, materials, flight mechanics, aerospace dynamics, stability, and control.

Students must complete a minimum of 12 units as listed under the course requirements. All of these units must be outside the requirements for the student's major.

Students in majors other than engineering and certain STEM majors may need to take additional courses to meet prerequisites for the courses required in this minor.

Interested students are recommended to meet with an Aerospace Engineering Minor advisor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (11 units)

- MATH 30 - Calculus I 3 *unit(s)* (B4)
MATH 30X may be used instead of MATH 30.
- MATH 31 - Calculus II 4 *unit(s)* (B4)
MATH 31X may be used instead of MATH 31.
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1B3)

Minor Requirements (13 units)

Required Courses (4 units)

- AE 15 - Air & Space Flight: Past, Present, and Future 1 *unit(s)*

- AE 100 - Fundamentals of Aerospace Engineering 3 *unit(s)*

Elective Courses (9 units)

Upon completion of the **Required Courses**, students must choose at least three (3) elective courses:

- AE 110 - Space Systems Engineering 3 *unit(s)*
- AE 112 - Aerospace Structures and Materials I 4 *unit(s)*
- AE 160 - Aerodynamics I 3 *unit(s)*
- AE 165 - Aerospace Flight Mechanics 3 *unit(s)*
- AE 166 - Rocketry 3 *unit(s)*

Total Units Required (24 units)

AE 160 Note: Aerospace Engineering minors may take any 100W course to meet the corequisite.

Applied Computing for Behavioral and Social Sciences Minor

The Minor in Applied Computing for Behavioral and Social Sciences, offered by the Interdisciplinary Engineering Program, is an interdisciplinary technology pathway program for behavioral and social science students seeking to develop and apply computing knowledge and skills toward real-world problems. Students learn programming languages such as Python and R, develop a working knowledge of data structures and algorithms, and complete a culminating interdisciplinary project.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12 units)

- ENGR 120 - Programming Concepts for Behavioral and Social Science Applications 3 *unit(s)*
- ENGR 121 - Data Structures and Algorithms for Behavioral and Social Science Applications 3 *unit(s)*
- ENGR 122 - Data Technology for Behavioral and Social Science Applications 3 *unit(s)*
- ENGR 195E - Interdisciplinary Computing Project 3 *unit(s)*

Total Units Required (12 units)

Aviation Minor

A Minor in Aviation, offered by the Department of Aviation and Technology, is granted upon the completion of a coherent course of study and may be designed to fit the needs of a student from another major. The minor must include at least 12 units, six of which must be upper-division. Six units must be completed in residence. Contact the department office (IS 111) for more details.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Biomedical Engineering Minor

Students must complete a minimum of 13 units as listed under the course requirements. All of these units must be outside the requirements for the student's major, i.e., the same courses cannot be listed both on the minor and the major forms. BME 115 (4 units) and BME 177 (3 units) are required for all students taking this minor. In consultation with the Biomedical Engineering advisor, students must select two additional courses from the group of biomedical engineering-based courses. It is the student's responsibility to make sure that the prerequisites for each course are met. Students in majors other than engineering, biology, chemistry, or physics will probably need to take additional courses to meet prerequisites for the courses required for this minor. This sequence of courses is the recommended pattern for engineering majors. Alternative patterns may be approved by the biomedical engineering advisor for students majoring in biology, physics, or chemistry.

Interested students are encouraged to meet with a Biomedical Engineering Department Adviser to fill out the Biomedical Engineering Minor Form.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (13 units)

- BME 115 - Foundations of Biomedical Engineering 4 *unit(s)*
- BME 177 - Physiology for Engineers 3 *unit(s)*

Technical Electives (6 units)

Complete two courses:

- BME 68 - Biomedical Applications of Metals and Ceramics 3 *unit(s)*
- BME 117 - Biotransport Phenomena 3 *unit(s)*
- BME 147 - Quantitative and Statistical Methods for Biomedical Engineers 3 *unit(s)*
- BME 165 - Applied Engineering Biomechanics 3 *unit(s)*
- BME 168 - Medical and Biological Polymers 3 *unit(s)*
- BME 174 - Biomedical Regulatory Requirements 3 *unit(s)*
- BME 178 - Biomedical Product Realization 3 *unit(s)*
- BME 182 - Orthotics and Prosthetics 3 *unit(s)*
- BME 187 - Medical Device Quality Systems 3 *unit(s)*
- BME 188 - Biomedical Device Manufacturing 3 *unit(s)*
- EE 127 - Electronics for Biomedical Applications 3 *unit(s)*

- BME 65 - Biomedical Applications of Statics 3 *unit(s)*
- BME 116 - Biosensors and Bioinstrumentation 3 *unit(s)*

Total Units Required (13 units)

Electronics Minor (Not Accepting Students)

The Minor in Electronics is offered by the Department of Aviation and Technology.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12 units)

Required Courses (6 units)

Complete Two Courses From:

- TECH 60 - Introduction to Electronics 3 *unit(s)*
- TECH 62 - Analog Circuits 3 *unit(s)*
- TECH 63 - Analog and Digital Circuits 3 *unit(s)*

Other Courses (6 units)

Complete six units from:

- TECH 115 - Automation and Robotics 3 *unit(s)*
- TECH 163 - Telecommunications Systems 3 *unit(s)*
- TECH 165 - Wireless Communications Technologies 3 *unit(s)*
- TECH 167 - Control Systems 3 *unit(s)*

Total Units Required (12 units)

Energy Systems Minor

The Energy Systems Minor, offered by the Department of Mechanical Engineering, covers basic theory and applications related to energy systems, including both conventional systems and alternative approaches for transition away from fossil fuels. The minor covers analysis and design of energy systems including thermal management and HVAC (heating, ventilation, and air conditioning). Focus areas include energy management in manufacturing facilities and HVAC in commercial buildings. Students also choose technical electives that span other contemporary topics in energy systems.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (0-10 units)

Complete one option:

Mechanical Engineering Option

- ME 111 - Fluid Mechanics 3 *unit(s)*
- ME 113 - Thermodynamics 4 *unit(s)*
- ME 114 - Heat Transfer 3 *unit(s)*

Chemical Engineering Option

- CHE 151 - Process Engineering Thermodynamics 4 *unit(s)*
- CHE 190 - Introduction to Transport Phenomena 3 *unit(s)*

Minor Requirements (12 units)

Core Courses (9 units)

- ME 171 - Energy Management in Manufacturing 3 *unit(s)*
- ME 182 - Thermal Systems Design 3 *unit(s)*
- ME 183 - HVAC Systems Design 3 *unit(s)*

Minor Electives (3 units)

Complete one course:

- CHE 176 - Energy Storage Systems 3 *unit(s)*
- ENGR 102 - Renewable Energy Engineering 3 *unit(s)*
- ENVS 133 - Sustainable Energy Strategies 3 *unit(s)*
- ME 170 - Solar Energy Engineering 3 *unit(s)*
- ME 172 - Alternative and Renewable Energy Resources 3 *unit(s)*
- ME 210 - Advanced Thermodynamics 3 *unit(s)*
- ME 211 - Advanced Heat Transfer 3 *unit(s)*

Total Units Required (12-22 units)

Engineering Management Minor

The Minor in Engineering Management is offered by the Department of Industrial and Systems Engineering.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12 units)

Required Courses (6 units)

- ISE 102 - Engineering Economic Systems 3 *unit(s)*
- ISE 151 - Engineering Management Systems in Global Society 3 *unit(s)* (V)

Additional Requirements (6 units)

Complete two courses from:

- ISE 105 - Introduction to Systems Engineering 3 *unit(s)*
- ISE 142 - Service Systems Engineering and Management 3 *unit(s)*
- ISE 155 - Supply Chain Engineering 3 *unit(s)*

Total Units Required (12 units)

Engineering Technology Minor

The Minor in Engineering Technology is offered by the Department of Aviation and Technology.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Required Courses (9 units)

- TECH 31 - Quality Assurance and Control 3 *unit(s)*
- TECH 145 - Lean Manufacturing 3 *unit(s)*
- TECH 198 - Technology and Civilization 3 *unit(s)* (V)

Other Courses (9 units)

At least 9 units of technical courses chosen from either the Engineering Technology, BS core or the Computer Network System Management or Manufacturing Systems concentrations (a maximum of 6 units of lower division courses).

Total Units Required (18 units)

Green Engineering Minor

Students must complete a minimum of 12 units as listed under the course requirements. All of these units must be outside the requirements for the student's major, i.e., the same courses cannot be listed both on the minor and the major forms. ENGR 102 or ME 172 (3 units) and ISE 103 (3 units) are required for all students taking this minor. Students also take one of the Environmental Studies or Business courses listed below. In consultation with an advisor from the Interdisciplinary Engineering Program, students must select one additional elective course. It is the student's responsibility to make sure that the prerequisites for each course are met. Students in majors other than engineering will probably need to take additional courses to meet prerequisites for the courses required for this minor. This sequence of courses is the recommended pattern for engineering majors.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12 units)

Core Courses (6 units)

- ISE 103 - Life Cycle Engineering 3 *unit(s)*

Complete One Course From:

- ENGR 102 - Renewable Energy Engineering 3 *unit(s)*
- ME 172 - Alternative and Renewable Energy Resources 3 *unit(s)*

Additional Course (3 units)

Complete one course from:

- ENVS 107 - Introduction to Environmental Economics and Policy 4 *unit(s)*
- ENVS 116 - Solar Energy Analysis 3 *unit(s)*
- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- ENVS 132 - Solar Home Design 3 *unit(s)*
- ENVS 148 - Sustainable Materials Management 4 *unit(s)*
- ENVS 167 - Managing Environmental Issues 3 *unit(s)*

Elective (3 units)

One additional course to be selected with and approved by the Green Engineering minor advisor

Total Units Required (12 units)

Innovation and Law Minor

The Minor in Innovation and Law, offered by the Interdisciplinary Engineering Program, provides students the opportunity to learn the basics of legal framework and laws that impact the practices of technology industry and venture development. The program also familiarizes students with the entrepreneurial process and teaches students how to analyze the legal, philosophical, and economic rationales behind defining and protecting intellectual property rights. This minor expands students' educational and career pathways in the legal profession in the areas of technology-related laws.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Required Courses (15 units)

- ENGR 100W - Engineering Reports 3 *unit(s)* (*WID+R*) or Any SJSU 100W (*WID*)
- ENGR 130 - Introduction to Intellectual Property for Engineers 3 *unit(s)*
- ENGR 131 - Introduction to Patents for Engineers 3 *unit(s)*
- BUS5 181 - Introduction to Entrepreneurship 3 *unit(s)*
- PHIL 137 - Puzzles in Innovation and Law 3 *unit(s)*

Elective Course (3 units)

Complete one course from:

- ENGL 107 - Professional and Technical Writing 4 *unit(s)*
- PHIL 134 - Computers, Ethics and Society 3 *unit(s)* (*V*)
- ECON 141 - Law and Economics 4 *unit(s)*
- DSID 135 - Design, Entrepreneurship, Intellectual Property and Professional Practice 3 *unit(s)*
- BUS5 163B - Business and Innovation in Emerging Economies 3 *unit(s)*
- BUS5 182 - Business Plans for New Ventures 3 *unit(s)*
- BUS5 184A - Management of Innovation 3 *unit(s)*
- BUS3 186 - Professional and Business Ethics 3 *unit(s)* (*S*)
- BUS5 186V - Venture Lab 3 *unit(s)*

Total Units Required (18 units)

Manufacturing Minor

The Minor in Manufacturing is offered by the Department of Aviation and Technology.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12 units)

Required Courses (3 units)

- TECH 46 - Machine Operations and Management 3 *unit(s)*

Manufacturing Electives (9 units)

Complete nine units from:

At least six units must be upper division

- TECH 41 - Machine Shop Operations and Safety 1 *unit(s)*
- TECH 45 - Facilities Design & Planning 3 *unit(s)*
- TECH 140 - Product Design and Prototyping 3 *unit(s)*
- TECH 145 - Lean Manufacturing 3 *unit(s)*
- TECH 147 - Manufacturing Analysis & Management 3 *unit(s)*

Total Units Required (12 units)

Materials Science and Engineering Minor

Students enrolled in good standing in an engineering or science major may complete a Minor in Materials Science and Engineering, offered by the Department of Chemical and Materials Engineering. To be awarded the Minor, which appears on the official diploma and transcript, the student must complete 12 units, all of which must be outside the required courses in the major. The 12 units cannot be counted on both the Minor Form and the Major Form. Either MATE 25 or MATE 115 (or both) must be included in the Minor. The student, in consultation with a Materials Engineering academic advisor, should select 12 units in either the electronic materials option, the structural materials option, or the general materials option. Prerequisites for each course must be met unless the student receives instructor permission to waive them.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12 units)

Choose an Option

Electronic Materials and Processing (12 units)

Complete 12 units from:

- MATE 25 - Introduction to Materials 3 *unit(s)*
- MATE 115 - Structure/Properties of Solids 3 *unit(s)*
- MATE 129 - Introduction to Integrated Circuits Processing and Design 3 *unit(s)*
- MATE 141 - Structure and Analysis of Materials 3 *unit(s)*
- MATE 153 - Electronic, Optical, and Magnetic Properties of Materials 3 *unit(s)*

Structural and Mechanical Materials (12 units)

Complete 12 units from:

- MATE 25 - Introduction to Materials 3 *unit(s)*
- MATE 115 - Structure/Properties of Solids 3 *unit(s)*
- MATE 135 - Introduction to Composite Materials 3 *unit(s)*
- MATE 141 - Structure and Analysis of Materials 3 *unit(s)*
- MATE 175 - Biomaterials 3 *unit(s)*
- MATE 185 - Ceramics 3 *unit(s)*
- MATE 186 - Polymers 3 *unit(s)*
- MATE 195 - Mechanical Behavior of Materials 3 *unit(s)*

General Materials (12 units)

- MATE 25 - Introduction to Materials 3 *unit(s)*
- MATE 115 - Structure/Properties of Solids 3 *unit(s)*
- 9 additional units from either of the options above

Total Units Required (12 units)

Robotics Minor

The Robotics Minor offered by the Department of Mechanical Engineering introduces students to the growing field of robotics and provides a concentrated experience in this multidisciplinary field. It covers fundamentals of designing, analyzing, modeling, controlling, and programming robots, and dives deeper in serial linkage - the primary makeup of robot mechanisms. Students will learn Denavit-Hartenberg parameters and descriptions, forward/inverse kinematics and dynamics, Newton's and Euler's Equations, and trajectory planning of serial robots. Students will also learn to effectively operate various serial robots and integrate other systems (such as machine vision) in the laboratory.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (6 units)

- EE 98 - Introduction to Circuit Analysis 3 *unit(s)* **or** PHYS 120A - Electronics, Data Acquisition & Analysis 3 *unit(s)*
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)* **or** MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*

Minor Requirements (17-18 units)

Required Courses (14-15 units)

Mechanical Engineering majors should consult with a minor advisor about substitutions for classes listed that are already required as part of their major.

- CE 95 - Theory and Application of Statics 3 *unit(s)* **or** CE 99 - Introductory Statics 2 *unit(s)*
- EE 30 - Introduction to Programming Micro-Controllers for Electrical Engineering 3 *unit(s)* **or** CMPE 30 - Programming Concepts and Methodology 3 *unit(s)* **or** other introductory programming class approved by a minor advisor.
- ME 101 - Dynamics 3 *unit(s)*
- ME 106 - Fundamentals of Mechatronics Engineering 4 *unit(s)* (*a different programming class may be substituted for the ME 30 prerequisite as approved by a minor advisor*)
- ME 192 - Robotics and Manufacturing Systems 3 *unit(s)* (*official Robotics minors do not need the ME 130 prerequisite*)

Electives (3 units)

Prerequisites may be waived based on a recommendation from the minor advisor and instructor consent. A 3.0 GPA is required to take 200-level courses. Other courses may be taken with advisor approval. Electives provide advanced coverage in areas such as automatic control system design, dynamic system control, microcontrollers, electronic sensors, and manufacturing automation.

Choose one of the following:

- ME 190 - Mechatronics System Design 3 *unit(s)*
- ME 187 - Automatic Control Systems Design 3 *unit(s)*
- AE 157 - Aerospace Automatic Control Systems Design 3 *unit(s)*
- EE 112 - Introduction to Signal Processing 3 *unit(s)*
- ISE 115 - Lean Integrated Manufacturing 3 *unit(s)*
- ME 280 - Automatic Control Engineering 3 *unit(s)*
- ME 281 - Advanced Control System Design 3 *unit(s)*
- ME 282 - Nonlinear and Adaptive Control 3 *unit(s)*
- ME 283 - Automatic Control of Manufacturing Processes 3 *unit(s)*
- ME 284 - Sensor Technology and Principles 3 *unit(s)*

Total Units Required (23-24 units)

Statistical Quality Engineering Minor

The Minor in Statistical Quality Engineering is offered by the Department of Industrial and Systems Engineering.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Major-Specific Graduation Requirements

All courses in this minor require a grade of "C- or better".

Minor Requirements (12 units)

Required Courses (9 units)

- ISE 131 - Statistical Process Control and Improvement 3 *unit(s)*
- ISE 135 - Design of Experiments 3 *unit(s)*

Complete One Course From:

- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- ISE 162 - Engineering Statistics and Analysis 2 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*

Additional Requirements (3 units)

Complete one course from:

- ISE 102 - Engineering Economic Systems 3 *unit(s)*
- ISE 151 - Engineering Management Systems in Global Society 3 *unit(s)* (V)

Total Units Required (12 units)

Sustainable Engineering Minor

Sustainable engineering is the incorporation of environmental, economic, and social equity considerations in the engineering design process. The United Nations details 17 Sustainable Development Goals for humanity. These target sustainability in science, food security, gender equality, poverty, infrastructure, water, life, climate, etc. Sustainable engineering contextualizes these goals for the engineering profession and offers solutions. The sustainable engineering minor focuses on energy and material concerns as they relate to the processes that produce commodity chemicals, consumer products, energy, etc. Coupled with the energy and materials considerations, are engineering economics to detail variable circular economies that exist in markets.

Students must complete a minimum of 12 units as listed under the course requirements. All of these units must be outside the requirements for the students major, i.e., the same courses cannot be listed both on the minor and the major forms. CHE 115 and CHE 133 (3 units each) are required for all students taking this minor. Students also take

any two of the College of Engineering courses listed below (3 units each). Students in some engineering majors may need to take additional courses to meet prerequisites for the courses required in this minor. Interested students are recommended to meet with a Sustainable Engineering Minor advisor. This minor is offered by the Department of Chemical and Materials Engineering.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (5 units)

- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- TECH 20A - Computer-Aided-Graphics 2 *unit(s)*

Minor Requirements (12 units)

Required Courses (6 units)

- CHE 115 - Industrial Chemical Calculations 3 *unit(s)*
- CHE 133 - Sustainable Engineering 3 *unit(s)*

Minor Electives (6 units)

Choose two of the following courses. The chemical engineering courses offer backgrounds in process engineering and introduce sustainability to the realm of engineering. The mechanical engineering and technology courses offer students a product-oriented option, an energy path, or a focus on pollution abatement strategies with additional process engineering experience. Some elective courses have additional prerequisites. Consult with your minor advisor to select minor electives. This minor is intended for majors in engineering and related fields.

- CHE 137 - Pollution Control Engineering 3 *unit(s)*
- CHE 172 - Biofuels Process Engineering 3 *unit(s)*
- CHE 174 - Hazardous Materials 3 *unit(s)*
- CHE 176 - Energy Storage Systems 3 *unit(s)*
- ENVS 116 - Solar Energy Analysis 3 *unit(s)*
- ENVS 133 - Sustainable Energy Strategies 3 *unit(s)*
- ME 170 - Solar Energy Engineering 3 *unit(s)*
- ME 172 - Alternative and Renewable Energy Resources 3 *unit(s)*
- TECH 140 - Product Design and Prototyping 3 *unit(s)*

Total Units (17 units)

Students in majors other than engineering and certain STEM majors may need to take additional courses to meet prerequisites for the courses required in this minor.

Additional Preparation Courses (Also Required for All Engineering Majors) (25-26 units)

- CHEM 1A - General Chemistry 5 units (B1+B3)
- MATH 30 - Calculus I 3 unit(s) (B4)
- MATH 31 - Calculus II 4 unit(s) (B4)
- MATH 32 - Calculus III 3 unit(s) (B4)
- CHE 110A - Mathematical Methods in Chemical Engineering 2 unit(s) or MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 unit(s) or MATH 33LA - Differential Equations and Linear Algebra 3 unit(s)
- PHYS 50 - General Physics I: Mechanics 4 units (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 units (B1+B3)

Master(s)

Aerospace Engineering, MS

- Educational Objectives for Graduate Program
- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- MS - Aerospace Engineering Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The MSAE Program, offered by the Department of Aerospace Engineering, is designed to prepare students for professional careers in industry or advanced study in Ph.D. programs. Students develop skills in research, design, development, experiment design, testing, and systems integration in air and space transportation systems. In addition to advanced aerospace engineering courses, electives are available in science, business, and other engineering fields. Class schedules are designed for the convenience of employed engineers who wish to pursue graduate work on a part-time basis. The MSAE Program welcomes students with undergraduate degrees in other engineering or science disciplines. For more information visit the MS Aerospace Engineering website.

Educational Objectives for Graduate Program

To provide MSAE graduates with

1. A strong foundation beyond the undergraduate level in their chosen focus area as well as in mathematics, basic science, and engineering fundamentals, to be able to solve current aerospace engineering problems.
2. Contemporary professional and lifelong learning skills to successfully compete for technical engineering positions in the local, national, and global engineering market, advance in their current position or pursue doctoral studies.
3. Expertise necessary to work in the analysis, design, development, and testing of aerospace engineering systems with possible specialization in areas such as aircraft design or space transportation and exploration.
4. Strong verbal and written communication skills, including the ability to write engineering reports.
5. Ability to perform research and work independently to solve open-ended aerospace engineering problems.

Admissions Requirements

Candidates must meet all the university admission requirements. Students can be admitted in either classified or conditionally classified standing. If an applicant's preparation for advanced graduate work is considered inadequate to

meet the course prerequisites or other departmental requirements, the conditions will include taking preparatory courses to meet these requirements. Such courses will not count as part of the master's degree program requirements.

To be admitted to classified standing, a student must possess a BS degree in Aerospace Engineering or related field (e.g., Aeronautical Engineering, Astronautical Engineering or Space Engineering, etc.) from an accredited institution with a grade point average of 2.75 or better in the last 60 units.

Students may be admitted with conditionally classified standing if they have a BS degree in any engineering or science discipline from an accredited institution. Students with conditionally classified standing will take a series of BS Aerospace Engineering core courses based on their evaluation by the AE Graduate Coordinator.

If an applicant's bachelor's degree is not from a US or Canadian university, a GRE must be taken; minimum scores acceptable for admission are listed on the Graduate Program Test Requirements webpage. Applicants from countries in which the native language is not English must achieve a minimum English-Language Proficiency (ELP) test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Advancement to Graduate Candidacy

Prior to registering for the first time (or upon re-entering), a student should consult with the AE Graduate Coordinator to develop a schedule of courses. Students admitted as conditionally classified must satisfy the requirements listed in their letter of acceptance. Students who have completed matriculation and achieved classified standing in the master's degree curriculum must next advance to candidacy for the degree. A student may advance to candidacy after completing a minimum of 9 units of graded work as a graduate student in letter-graded 100- or 200-level courses acceptable to the AE Department, as well as fulfilling the other university requirements for advancement to candidacy for the MS degree, detailed in the Graduate Policies & Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies & Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

MS - Aerospace Engineering Graduation Requirements

The AE Department offers courses designed to provide a flexible curriculum structure that allows students to follow a course of study to meet their individual career goals. As shown below, the program consists of 30 semester units of approved work, including 6 units devoted to a thesis or project. The required coursework includes 3 units of advanced mathematics, 12 units of aerospace core subjects, and 9 units of electives.

In selecting a project/thesis topic, the student must first identify a faculty member in his or her area of interest. Once the faculty member agrees to act as the student's project/thesis advisor, a program of study is established, including the project/thesis topic.

Culminating Experience (Plan A or Plan B)

In selecting a Plan A (Thesis) or Plan B (Project) topic, the student must first identify a faculty member in his / her area of interest. Once the faculty member agrees to act as the student's advisor, a program of study is established, including the thesis or project topic. In either option students perform graduate-level research and/or design and/ or development, involving aerospace systems or components of aerospace systems under the supervision of an AE faculty member. Students are encouraged to submit and present their work at student and/or professional conferences.

A project or thesis proposal is due to the AE 295A/ AE 299 Course Coordinator no later than the 2nd week of class. A written progress report is due at the end of each month. The first progress report must include a review of the relevant literature. An end-of-semester written report is expected at the end of the 1st semester.

Plan A (Thesis)

A thesis requires approval by a committee of three members. Two of the thesis committee members must be SJSU faculty. An AE faculty member must agree to serve as the chair of the committee. Students must secure the commitment of all three members of their thesis committee. The committee must approve the student's thesis proposal no later than the 2nd week of the 1st semester. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the other committee members. The candidate for the MSAE degree must successfully pass a final oral defense of the thesis.

Plan B (Project)

In the Project Option students work under the supervision of an AE faculty member.

Master's Requirements (30 units)

Advanced Mathematics (3 units)

- AE 200 - Engineering Analysis of Aerospace Systems 3 *unit(s)*

Core Courses (12 units)

Complete at least one course from each of the four areas described below.

Propulsion (3 units)

Students who have completed AE 167 or equivalent at the undergraduate level **and** are completing the **Aircraft Design** specialization may complete an additional graduate-level elective (3 units) in lieu of AE 267. Students completing the **Space Transportation and Exploration** specialization must complete AE 267.

- AE 267 - Space Propulsion Systems 3 *unit(s)*

Dynamics and Control (3 units)

- AE 242 - Orbital Mechanics and Mission Design 3 *unit(s)*
- AE 243 - Advanced Astrodynamics 3 *unit(s)*
- AE 245 - Spacecraft Dynamics and Control 3 *unit(s)*
- AE 246 - Advanced Aircraft Stability and Control 3 *unit(s)*
- AE 247 - Trajectory Optimization in Aerospace Applications 3 *unit(s)*

Structures and Materials (3 units)

- AE 250 - Advanced Structures and Materials 3 *unit(s)*
- AE 251 - Structural Vibrations for Aerospace Applications 3 *unit(s)*

Fluid Dynamics (3 units)

- AE 262 - Advanced Aerodynamics 3 *unit(s)*
- AE 264 - Gas Dynamics 3 *unit(s)*
- AE 265 - Boundary Layers 3 *unit(s)*
- AE 266 - Hypersonics 3 *unit(s)*
- AE 269 - Advanced Computational Fluid Dynamics 3 *unit(s)*

Area of Specialization/Approved Electives (9 units)

Complete three electives from one of the specialization areas below in consultation with the AE Graduate Coordinator. Students electing not to complete an area of specialization must complete one GVAR Course (AE 210, AE 271 or AE 273) and select two additional (100-level or 200-level) elective courses in consultation with the AE Graduate Coordinator.

Aircraft Design (9 units)

Complete either AE 271 or AE 273 and an additional 2 courses from below for a total of 9 units.

- AE 246 - Advanced Aircraft Stability and Control 3 *unit(s)*
- AE 247 - Trajectory Optimization in Aerospace Applications 3 *unit(s)*
- AE 250 - Advanced Structures and Materials 3 *unit(s)*
- AE 251 - Structural Vibrations for Aerospace Applications 3 *unit(s)*
- AE 262 - Advanced Aerodynamics 3 *unit(s)*
- AE 264 - Gas Dynamics 3 *unit(s)*
- AE 265 - Boundary Layers 3 *unit(s)*
- AE 266 - Hypersonics 3 *unit(s)*
- AE 269 - Advanced Computational Fluid Dynamics 3 *unit(s)*
- AE 271 - Advanced Aircraft Design 3 *unit(s)* (GVAR)
- AE 273 - Aircraft Subsystems 3 *unit(s)* (GVAR)

Space Transportation and Exploration (9 units)

Complete AE 210 and an additional 2 courses from below for a total of 9 units.

- AE 210 - Advanced Space Systems Engineering 3 *unit(s)* (GVAR)
- AE 242 - Orbital Mechanics and Mission Design 3 *unit(s)*
- AE 243 - Advanced Astrodynamics 3 *unit(s)*
- AE 245 - Spacecraft Dynamics and Control 3 *unit(s)*
- AE 247 - Trajectory Optimization in Aerospace Applications 3 *unit(s)*
- AE 250 - Advanced Structures and Materials 3 *unit(s)*
- AE 251 - Structural Vibrations for Aerospace Applications 3 *unit(s)*
- AE 264 - Gas Dynamics 3 *unit(s)*

- AE 265 - Boundary Layers 3 *unit(s)*
- AE 266 - Hypersonics 3 *unit(s)*
- AE 269 - Advanced Computational Fluid Dynamics 3 *unit(s)*

Culminating Experience (6 units)

Complete one option (Plan A or Plan B):

Plan A (Thesis)

- AE 299 - Aerospace Engineering Masters Thesis 3 *unit(s)* (*Students take AE 299 twice.*)

Plan B (Project)

- AE 295A - Aerospace Engineering Masters Project I 3 *unit(s)*
- AE 295B - Aerospace Engineering Masters Project II 3 *unit(s)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the AE Graduate Coordinator. Students may also choose electives from other engineering fields, science, or business.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Artificial Intelligence, MS

- Admissions Requirements
- Advancement to Candidacy
- Graduation Requirements
- Master's Requirements (33 units)
- Program Learning Outcomes

MS in Artificial Intelligence program provides students with a state-of-the-art educational experience to become outstanding, socially responsible engineers of AI systems. Students will learn the theoretical foundations and gain practical skills to manage and engineer various data forms, to make predictive analyses, to derive actionable insights, and develop intelligent hardware and software systems and related cutting-edge AI technologies. The program will draw on insights from mathematics, statistical analysis, computer science, software engineering, and systems engineering and is, therefore, best suited for students with software/computer engineering, computer science, mathematics, and closely related backgrounds.

The program offers specializations in Data Science and Autonomous Systems.

Visit the program website at <https://www.sjsu.edu/cmpe/academic/ms-ai/>.

Admission Requirements

Candidates must meet all university admission requirements. Applicants can be admitted in either classified or conditionally classified standing. If an applicant's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental requirements, the conditions will include taking preparatory courses to meet these requirements. These courses will not count as part of the master's degree program requirements.

For acceptance by the Department of Computer Engineering, the applicant must satisfy the following requirements:

- a. Undergraduate degree in math, physics, computer science, engineering, or a closely related field, equivalent to a four-year U.S. undergraduate baccalaureate degree, with demonstrated college-level courses in programming, data structures, algorithm design, three-semester sequence of calculus, linear algebra and statistics.
- b. Undergraduate GPA of 3.0 or higher.
- c. If the undergraduate program is not ABET-accredited, GRE is required with a minimum GRE q+v of 294 and GRE AWA of 3.0. GRE q+v minimum higher than 294 may be required for successful admission depending on the number of applicants.
- d. International applicants must meet SJSU's minimum requirements on English-language proficiency tests.

Advancement to Candidacy

Students may advance to candidacy after completing all admission conditions and all prerequisites for the culminating experience including the Graduation Writing Assessment Requirement (GWAR).

Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies & Procedures.

Master's Requirements (33 units)

Core Courses (9 units)

- CMPE 252 - Artificial Intelligence and Data Engineering 3 *unit(s)*
- CMPE 257 - Machine Learning 3 *unit(s)*
- ISE 201 - Math Foundations for Decision and Data Sciences 3 *unit(s)*

Specialization Courses (6 units)

Complete at least 6 units from the same specialization.

Data Science (at least 6 units)

- CMPE 255 - Data Mining 3 *unit(s)*
- CMPE 256 - Advanced Data Mining 3 *unit(s)*
- CMPE 259 - Natural Language Processing 3 *unit(s)*

Autonomous Systems (at least 6 units)

- CMPE 249 - Intelligent Autonomous Systems 3 *unit(s)*
- CMPE 258 - Deep Learning 3 *unit(s)*
- CMPE 260 - Reinforcement Learning 3 *unit(s)*

Elective Courses (9 units)

Select 3 courses (9 units) from the list below. At least 3 units need to be from Area A course list. The remaining 6 units can be selected from either list.

Area A (at least 3 units)

- CMPE 249 - Intelligent Autonomous Systems 3 *unit(s)*
- CMPE 255 - Data Mining 3 *unit(s)*
- CMPE 256 - Advanced Data Mining 3 *unit(s)*
- CMPE 258 - Deep Learning 3 *unit(s)*
- CMPE 259 - Natural Language Processing 3 *unit(s)*
- CMPE 260 - Reinforcement Learning 3 *unit(s)*

Area B (up to 6 units)

For the most updated list of approved Area B technical electives please refer to the MS AI home page (<https://www.sjsu.edu/cmpe/academic/ms-ai/msaiprogram-requirements.php>). Courses not listed as approved Area B technical electives need prior approval from the MS AI program coordinator.

Graduate Writing Requirement (3 units)

Students must pass the Graduation Writing Assessment Requirement (GWAR).

- CMPE 294 - Computer Engineering Seminar 3 *unit(s)* (GWAR) (recommended)
- ENGR 200W - Engineering Reports and Graduate Research 3 *unit(s)*

Culminating Experience (6 units)

All students must complete one of the following culminating experiences: thesis or project. Theses and projects are completed under the supervision of an advisor.

Plan A (Thesis)

A master's thesis includes original research on a topic approved by the thesis committee and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It undergoes a thorough review and revision process under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

- CMPE 299A - Master Thesis I
- CMPE 299B - Master Thesis II

Plan B (Project)

A master's project is a research or development effort performed by a student individually on a topic chosen by mutual agreement between an advisor and the student. The choice of project topic is also approved by the Graduate

Advisor. The individual student projects could be distinct components of a larger integrated project performed by a team of students. Students complete CMPE 295A and CMPE 295B. At the end of CMPE 295B, a project report is submitted for department review, and students present their project work in a department project exposition.

Total Units Required (33 units)

Biomedical Engineering, Biomedical Devices Concentration, MS

- Requirements for Admission
- Requirements for Candidacy
- Master's Requirements (30 units)
- Program Learning Outcomes

The concentration in Biomedical Devices, offered by the Department of Biomedical Engineering, offers the student the opportunity to focus on the design, development, and manufacture of medical devices that either come into contact with the human body or are implanted within the human body. This concentration area has been created to provide individuals with B.S. degrees in an engineering field or chemistry or physics with the necessary graduate-level education that prepares them to function effectively in this environment.

Requirements for Admission

Applicants must meet all university admission requirements. Applicants who have a major GPA of 3.0 or higher are not required to take the GRE. All others must take the GRE General Test and obtain a combined score of 315 or higher in the Verbal and Quantitative sections, and 3.5 or higher in the Analytical Writing section.

Students can be admitted to either classified or conditionally classified standing. To be admitted to classified standing, a student must possess a BS degree in biomedical engineering, or its equivalent from an accredited institution with a grade point average of 3.0 or better in the last 60 semester units, have met the GRE requirement if their major GPA is below 3.0, and have completed any required Transition Courses, or their equivalents, with grades of B or better.

Conditionally Classified Admission

Students can be admitted to conditionally classified standing if they have a BS degree in an engineering discipline, chemistry, physics, or biology from an accredited institution. Students with conditionally classified standing will take a series of Transition Courses, as determined by the Graduate Coordinator. Once the series is completed satisfactorily, with grades of B or better, students can petition for transfer to classified standing. For more information on the transition courses see the section on Transition Courses below, or, contact the Biomedical Engineering Department Graduate Coordinator at biomedical-engineering@sjsu.edu.

Advancement to Candidacy

Students must meet the university's requirements for candidacy, which include classified standing and the successful completion of a minimum of 9 units of graduate-level classes with grades of B or better. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy.

Course Requirements

To meet the requirements for the MS, Biomedical Engineering degree, a student must complete 30 units of approved courses. Students must achieve a minimum grade of a "C" in each course, a cumulative GPA of 3.0 or better in **all** their coursework, AND a GPA of 3.0 or higher for the courses listed in the Candidacy form.

Transition Courses

Students may be required to complete some or all of the following transition courses (or equivalent courses) prior to being admitted to Classified Standing in the major.

- BME 65 - Biomedical Applications of Statics 3 *unit(s)*
- BME 68 - Biomedical Applications of Metals and Ceramics 3 *unit(s)*
- BME 115 - Foundations of Biomedical Engineering 4 *unit(s)*
- BME 147 - Quantitative and Statistical Methods for Biomedical Engineers 3 *unit(s)*
- BME 165 - Applied Engineering Biomechanics 3 *unit(s)*
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- EE 98 - Introduction to Circuit Analysis 3 *unit(s)*
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The GWAR is satisfied with BME 274, which is a core course.

Culminating Experience

Included in the 30 units of approved courses is the requirement that students must also complete a written thesis or project report and an oral defense of their thesis or project. The candidate may choose either the Plan A (thesis) or Plan B (project) option. For either option, the student is required to develop a project proposal in BME 291. This must be approved by the student's project adviser and the reading committee at the culmination of BME 291. Once the proposal is approved, the student is required to:

- Implement the approved research plan using appropriate methods for the investigation
- Use appropriate statistical techniques for analysis of the data and drawing conclusions
- Discuss the results in light of findings reported by other investigators
- Write a professional report of appropriate length
- Present it and defend the project to the reading committee

Plan A (Thesis)

Please see the "Plan A (Thesis)" description under the requirements for the Biomedical Engineering, MS degree.

Plan B (Project)

Please see the "Plan A (Thesis)" description under the requirements for the Biomedical Engineering, MS degree.

Master's Requirements (30 units)

Core Courses (18 units)

- BME 207 - Experimental Methods in BME 3 *unit(s)* (GWAR)
- BME 210 - Mathematical Methods in Biomedical Engineering 3 *unit(s)*
- BME 272 - Biomedical Device Design and Principles 3 *unit(s)*
- BME 274 - Regulatory, Clinical and Manufacturing Aspects of Medical Devices 3 *unit(s)* (GWAR)
- BME 276 - Project Management in Biomedical Technologies 3 *unit(s)*
- BME 291 - MS Thesis/Project Preparation Seminar 3 *unit(s)*

Concentration Requirements (6 units)

- BME 168 - Medical and Biological Polymers 3 *unit(s)*
- BME 254 - Microscale Biomedical Systems: Physics and Applications 3 *unit(s)*

Electives (0-3 units)

Complete 0-3 units:

- BME 217 - Experimental and Computational Biofluid Mechanics 3 *unit(s)*
- BME 254 - Microscale Biomedical Systems: Physics and Applications 3 *unit(s)*
- BME 256 - Biomedical Applications of Nanoplatfroms 3 *unit(s)*
- BME 258 - Medical Imaging for Engineers 3 *unit(s)*
- BME 280 - Graduate Research Studies 1-3 *unit(s)*
- BME 288 - Tissue Engineering 3 *unit(s)*

Culminating Experience (3-6 units)

Plan A (Thesis Option) (6 units)

- BME 298 - MS Project 3 *unit(s)*
- BME 299 - MS Thesis 3 *unit(s)*

Plan B (Project Option) (3 units)

- BME 298 - MS Project 3 *unit(s)*

Total Units Required (30 units)

Biomedical Engineering, MS

- Requirements for Admission
- Advancement to Candidacy
- Master's Preparation
- Master's Requirements (30 units)

- Program Learning Outcomes

Students pursuing the MS, Biomedical Engineering degree, offered by the Department of Biomedical Engineering, will have the satisfaction of being actively engaged in a discipline that has human health and welfare as its primary focus. Biomedical Engineering is an inherently interdisciplinary field in which professionals from engineering and the physical sciences play a major role in developing engineered products for deployment in the human body.

Requirements for Admission

Applicants must meet all university admissions requirements. Applicants who have a major GPA of 3.0 or higher are not required to take the GRE. All others must take the GRE General Test and obtain a combined score of 315 or higher in the Verbal and Quantitative sections, and 3.5 or higher in the Analytical Writing section.

Students can be admitted to either classified or conditionally classified standing. To be admitted to classified standing, a student must possess a BS degree in biomedical engineering, or its equivalent from an accredited institution with a grade point average of 3.0 or better in the last 60 semester units, have met the GRE requirement if their major GPA is below 3.0, and have completed the Transition Courses, or their equivalents, with grades of B or better.

Conditionally Classified Admission

Students can be admitted to conditionally classified standing if they have a BS degree in an engineering discipline, chemistry, physics, or biology from an accredited institution. Students with conditionally classified standing will take a series of Transition Courses, as determined by the Graduate Coordinator. Once the series is completed satisfactorily, with grades of B or better, students can petition for transfer to classified standing. For more information on the transition courses see the section on Transition Courses below, or contact the Biomedical Engineering Department Graduate Coordinator at biomedical-engineering@sjsu.edu.

Advancement to Candidacy

Students must meet the university's requirements for candidacy, which include classified standing and the successful completion of a minimum of 9 units of graduate-level classes with grades of B or better. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy.

Course Requirements

To meet the requirements for the MS, Biomedical Engineering degree, a student must complete 30 units of approved courses. Students must achieve a minimum of a "C" in each course, a cumulative GPA of 3.0 or better in all their coursework, AND a GPA of 3.0 or higher for the courses listed in the Candidacy form.

Transition Courses

Students may be required to complete some or all of the following transition courses (or equivalent courses) prior to being admitted to Classified Standing in the major.

- BME 65 - Biomedical Applications of Statics 3 *unit(s)*
- BME 68 - Biomedical Applications of Metals and Ceramics 3 *unit(s)*
- BME 115 - Foundations of Biomedical Engineering 4 *unit(s)*

- BME 147 - Quantitative and Statistical Methods for Biomedical Engineers 3 *unit(s)*
- BME 165 - Applied Engineering Biomechanics 3 *unit(s)*
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- EE 98 - Introduction to Circuit Analysis 3 *unit(s)*
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Graduation Writing Assessment Requirement

At SJSU, students must complete the Graduation Writing Assessment Requirement (GWAR). The GWAR is satisfied with BME 274, which is a core course.

Culminating Experience

Included in the 30 approved units is the requirement that students must also complete a written thesis or project report and an oral defense of their thesis or project. The candidate may choose either the Plan A (Thesis) or Plan B (Project) option. For either option, the student is required to develop a project proposal in BME 291. This must be approved by the student's project adviser and the reading committee at the culmination of BME 291. Once the proposal is approved, the student is required to:

- a. implement the approved research plan using appropriate methods for the investigation,
- b. use appropriate statistical techniques for analysis of the data and drawing conclusions,
- c. discuss the results in light of findings reported by other investigators,
- d. write a professional report of appropriate length, and
- e. present it and defend the project to the reading committee.

Plan A (Thesis)

The student who opts to complete a master's thesis is responsible for securing the commitment of a full-time tenured or tenure-track BME faculty member who agrees to serve as the thesis committee chair. The student must also secure the commitments of two additional committee members, one of whom must be a full-time tenured or tenure-track faculty member at SJSU, to serve on the student's thesis committee. The student must write a thesis proposal and have it approved by the thesis committee and pass BME 291 - MS Thesis/Project Preparation Seminar (3 units) and BME 298 - MS Project (3 units) before enrolling in BME 299 - MS Thesis (3 units). The thesis must also meet all university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

Students opting to complete a master's project must pass BME 291 - MS Thesis/Project Preparation Seminar (3 units) before enrolling in BME 298 - MS Project (3 units).

The project proposal is prepared in BME 291 and must be approved by the student's reading committee at the culmination of that course.

Master's Requirements (30 units)

Core Courses (18 units)

- BME 207 - Experimental Methods in BME 3 *unit(s)* (GWAR)
- BME 210 - Mathematical Methods in Biomedical Engineering 3 *unit(s)*
- BME 272 - Biomedical Device Design and Principles 3 *unit(s)*
- BME 274 - Regulatory, Clinical and Manufacturing Aspects of Medical Devices 3 *unit(s)* (GWAR)
- BME 276 - Project Management in Biomedical Technologies 3 *unit(s)*
- BME 291 - MS Thesis/Project Preparation Seminar 3 *unit(s)*

Biomedical Engineering Electives (6-9 units)

Complete 6-9 units from the list below, or from other approved electives.

- BME 217 - Experimental and Computational Biofluid Mechanics 3 *unit(s)*
- BME 254 - Microscale Biomedical Systems: Physics and Applications 3 *unit(s)*
- BME 256 - Biomedical Applications of Nanoplatfroms 3 *unit(s)*
- BME 258 - Medical Imaging for Engineers 3 *unit(s)*
- BME 280 - Graduate Research Studies 1-3 *unit(s)*
- BME 288 - Tissue Engineering 3 *unit(s)*

Culminating Experience (3-6 units)

Plan A (Thesis Option) (6 units)

- BME 298 - MS Project 3 *unit(s)*
- BME 299 - MS Thesis 3 *unit(s)*

Plan B (Project Option) (3 units)

- BME 298 - MS Project 3 *unit(s)*

Total Units Required (30 units)

Chemical Engineering, MS

- Requirements for Admission
- Requirements for Candidacy
- Master's Requirements (30 units)
- Program Learning Outcomes

The MS Chemical Engineering program, offered by the Department of Chemical and Materials Engineering, provides advanced study of chemical engineering topics with an emphasis on both the fundamental and applied aspects. Elective courses are also available in science, other engineering fields, and business. This broad-based, multidisciplinary educational program has proven to be an important factor for a student's future success including leading Silicon Valley companies and in Ph.D. programs.

Faculty are involved in research areas including biochemical engineering, semiconductor processing, green and alternative energy, microfluidics, polymers and nanocomposites, nanotechnology, and environmental health and safety engineering, remediation, sustainability, and computational methods. Research activity is sponsored by local industries as well as by government funding agencies.

The MS Chemical Engineering program welcomes students with undergraduate BS degrees in closely related science (e.g. biology, chemistry, physics) and engineering disciplines (e.g. biochemical, biomedical, civil, materials, and mechanical).

Class schedules are designed for the convenience of employed engineers who wish to pursue graduate work on a part-time basis as the majority of classes are scheduled during the evening hours.

Department Website: www.sjsu.edu/cme.

Requirements for Admission

University Admission

Candidates must apply through the CSU admissions portal, Cal State Apply, and meet all university admissions requirements. Applicants should note that some department admission requirements are higher than university admissions requirements.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. The program does not currently require the GRE for admission.

Admission to the Program

Candidates must meet all the university admissions requirements. Students can be admitted in either classified or conditionally classified standing. To be admitted to classified standing, a student must possess a U.S. baccalaureate degree with a major in chemical engineering and a grade point average of 3.0 or better in the last 60 units, from an ABET-accredited chemical engineering program.

Students can be admitted with conditionally classified standing if they have a CHE degree from a U.S. accredited university in which they obtained a 2.7-2.99 GPA in the last 60 units; a U.S. equivalent CHE degree from a non-U.S. institution; or a BS degree in chemistry, biology, physics or closely related engineering discipline from an accredited or equivalent institution. Students admitted with conditionally classified standing will take a series of transition courses. The program admissions letter will explain terms and requirements. Once these conditions are completed satisfactorily, students can petition for classified standing. For more information on transition courses, see the department website.

Requirements for Candidacy

Students must meet the university requirements for candidacy which include successful completion of the Graduation Writing Assessment Requirement (GWAR). The University requires that all graduate students complete the GWAR as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Course Requirements

To meet the requirements for the MS - Chemical Engineering degree, a student must complete 30 units of approved courses. Students must achieve a minimum of a "C" in each course and maintain a cumulative GPA of 3.0 or better. In addition to the 30 approved course units, students should select a Culminating Experience in consultation with their SJSU research advisor, and a written thesis or project report and an oral defense of their thesis or project must be completed.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students in the MS, Chemical Engineering program will complete CHE 280 and CHE 281 and may complete 1-unit of CHE 298 / CHE 298I or CHE 299 / CHE 299I through their choice of a graduate project or master's thesis, respectively.

Thesis Requirements

Students opting to complete a master's thesis are responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the thesis committee chair. The student must also secure the commitments of two additional committee members, one of whom must be a full or part-time SJSU faculty member, to serve as the student's thesis committee. If the student is completing their thesis research off-site, then one person of their thesis committee must be at least a supervisor-level employee from that off-site facility. The student must write a thesis proposal and have it approved by the thesis committee in order to pass CHE 281. CHE 299 is taken in the semester the student expects to complete their final oral and written defense which will serve as their culminating experience. The MS candidate must successfully pass an oral defense and complete an approved thesis report in order to receive credit for CHE 299. Students must be enrolled in courses every semester with the exception of an approved leave of absence for one semester. Students who have finished all their 30 units with the exception of an RP grade in CHE 299 are eligible for enrollment in CHE 1290R for a reduced tuition fee. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Project Requirements

Students opting to complete a graduate project are responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the project committee chair. The student must also secure the commitments of an additional committee member to serve as the student's project committee. If the student is completing their thesis project research off-site, then one person of their project committee must be at least a supervisor-level employee from that off-site facility. The student must write a project proposal and have it approved by the project committee in order to pass CHE 281. CHE 298 is taken in the semester the student expects to complete their final oral defense and written project report, which will serve as their culminating experience. The MS candidate must successfully pass an oral and defense and complete an approved written project report in order to receive credit for CHE 298. Students must be enrolled in courses every semester with the exception of an approved leave of absence for one semester. Students who have finished all their 30 units with the exception of an RP grade in CHE 298 are eligible for enrollment in CHE 1290R for a reduced tuition fee.

Master's Requirements (30 units)

Core Courses (12 units)

- CHE 200 - Research Methods 3 *unit(s)* (GWAR)
- CHE 211 - Advanced Chemical Engineering Thermodynamics 3 *unit(s)*
- CHE 218 - Reaction Kinetics 3 *unit(s)* (GWAR)
- CHE 219 - Transport Processes 3 *unit(s)*

Approved Electives (12 units)

12 units of electives selected in consultation with a graduate advisor. At least one technical elective needs to be an approved 200-level course.

Only students who are doing research on campus may be eligible for CHE 282 (3 units). CHE 282 may be taken 2 times for a maximum of 6 units of technical elective credit. Only one section of CHE 280/CHE 280I/CHE 282 can be taken per semester.

Culminating Experience (6 units)

- CHE 281 - MS Thesis/Project Preparation Seminar 3 *unit(s)*
- CHE 280 - Graduate Research OR CHE 280I - Graduate Research Internship 2 *unit(s)*

Complete one course for 1 unit:

- CHE 298 - MS Research/Project 1-2 *unit(s)*
- CHE 298I - MS Research/Project Internship 1-3 *unit(s)*
- CHE 299 - Master's Thesis 1-3 *unit(s)*
- CHE 299I - Master's Thesis Internship 1-3 *unit(s)*

Total Units Required (30 units)

Civil Engineering, MS

- Program Educational Objectives and Graduate Program Outcomes
- Admissions Requirements
- Requirements for Admission to Conditionally Classified Standing
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Civil Engineering program is designed for students to specialize in their choice of sub-discipline in Civil Engineering. The Department of Civil and Environmental Engineering offers specializations in Construction Management, Environmental Engineering, Geotechnical Engineering, Structural Engineering, Transportation Engineering, and Water Resources Engineering. Courses are practical-oriented, focusing on content and skills that prepare engineers to enter and/or advance in industry or enter doctoral programs. The program offers coursework in a once-per-week format in the afternoons and evenings to accommodate working individuals who wish to pursue their studies while gaining industry experience. Additional information is available at cee.sjsu.edu.

Program Educational Objectives and Graduate Program Outcomes

The graduate program's educational objectives (PEOs) for Civil Engineering are to

- Prepare students for their professional careers and licensure by strengthening their knowledge in their specialization (depth) and extending their skills and knowledge base (breadth);
- Provide students advanced proficiencies for professional practice to enable them to advance in the licensing process and equip them for advancement in their career;
- Improve students' research skills and prepare them for further graduate study;
- Provide students with experience and skills for multi-disciplinary and cross-CE disciplinary practice.

Four graduate program learning outcomes (PLOs) are aligned with the PEOs and are assessed in individual graduate courses. By the end of the program, students should be able to

- Apply advanced concepts, theory, and analysis for problem-solving;
- Synthesize and integrate necessary engineering concepts into engineering solution process;
- Apply modern tools for computations, simulations, analysis, and design;
- Communicate effectively.

Admissions Requirements

Requirements for Admission to Classified Standing

Prospective students must apply separately to the university to obtain approval for graduate-level admission and to the department to obtain admission into the MS in Civil Engineering program. In addition to meeting university admission requirements, an applicant must have:

- A bachelor's degree in civil engineering
- A 2.7 grade point average (4.0-based scale)

Requirements for Admission to Conditionally Classified Standing

Applicants who do not qualify for classified standing in civil engineering but who meet university requirements for graduate admission and whose academic records or professional achievements and maturity give promise of satisfactory performance in graduate study in civil engineering may, upon approval of a committee of department faculty, be admitted, with specific conditions, as conditionally classified. The conditions must be fulfilled before the student can be advanced to candidacy for the degree. If the conditions are not fulfilled, the program reserves the right to dismiss the student from the program by notifying the Associate Dean of Graduate Studies. This process is known as an administrative academic disqualification (see Section 41300.1, Title 5, California Code of Regulations). Applicants whose bachelor's degrees are not in civil engineering will be required to take additional courses that will not be counted in the graduate degree program for the MSCE. Details can be obtained on the department website at cee.sjsu.edu/graduate-studies/makeup-requirements.

English Proficiency Requirements

If an applicant's bachelor's degree is not from a U.S. or Canadian university, a GRE must be taken; minimum scores acceptable for admission are listed on the Graduate Program Test Requirements webpage at GAPE. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE.

Requirements for Advancement to Graduate Candidacy

Conditionally classified students must satisfy the conditional requirements listed in their letter of acceptance prior to advancing to candidacy. Students who have completed matriculation and achieved classified standing in the MS degree may advance to candidacy after completing a minimum of 9 units of graded work as a graduate student in letter-graded 100 or 200-level courses acceptable to the CE Department. Students must also fulfill other university requirements for advancement to candidacy for the master's degree as outlined in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Approved courses may include graduate courses and upper-division elective courses in Civil Engineering and graduate or upper-division courses in other university departments from a list approved by the Civil Engineering Department Curriculum Committee. The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15. At least 60% of the courses taken must be letter-graded. No more than 30% of the courses listed for candidacy can be transfer units, including any graduate-level courses taken in the senior undergraduate year at SJSU.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Eligible primary and secondary areas of specialization in civil engineering areas are:

- Construction Engineering
- Environmental Engineering
- Geotechnical Engineering
- Structural Engineering
- Transportation Engineering
- Water Resources Engineering

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). The GWAR is satisfied with CE 204 or CE 248 for this degree.

Culminating Experience

Plan A (Thesis)

Students choosing this option must complete 6 units of Project and Thesis courses. The student is responsible for securing the commitment of three committee members, in accordance with university policy, to serve as the student's thesis committee. One faculty member in the CEE department must agree to serve as the thesis committee chair. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The candidate must pass a final oral defense of the thesis. Meeting thesis standards and passing the oral defense is solely the responsibility of the student and a student who fails to meet these standards will be required to maintain continuous enrollment at the university until the work is complete.

Plan B (Project)

Students choosing the Project option must complete 3 units of CE 298 under the advisement of at least one departmental faculty member. The student is also responsible for securing a committee to review the project. The project must culminate in a project report and an oral defense of the project. In addition to the project, the student must select and complete a program in a secondary area of emphasis in consultation with their advisor.

Plan B (Comprehensive Exam)

Students choosing this option must sign up for and pass the departmental comprehensive exam, given once per semester, during the final term of study. The student is responsible for applying for graduation prior to signing up for the exam. In addition to the comprehensive exam, the student must select and complete a program in a secondary area of emphasis in consultation with their advisor. The comprehensive exam covers topics in the student's primary and secondary areas of emphasis. Signing up for the exam does not necessarily meet enrollment requirements for external agencies and cannot be used for that purpose. Students who fail to register for or pass the comprehensive exam in their final term of study will be required to maintain continuous enrollment with the university in subsequent semesters and may be required to complete remedial work.

Master's Requirements (30 units)

Core Courses (15-18 units)

- 100-Level or 200-Level CE Courses within one primary area of specialization

Electives (6-9 units)

Consent of graduate advisor required

Culminating Experience (6-12 units)

Complete One Option (Plan A Thesis, Plan B Project or Plan B Comprehensive Exam)

Plan A (Thesis) (6 units)

- CE 298 - Special Problems *1-6 unit(s)*
- CE 299 - Master's Thesis *1-6 unit(s)*

Plan B (Project) (9-12 units)

- Project students take 6-9 units in a secondary area of specialization *6-9 unit(s)*
- CE 298 - Special Problems *1-6 unit(s) (3 units required)*

Plan B (Comprehensive Exam) (6-9 units)

- Comprehensive Exam students take 6-9 units in a secondary area of specialization *6-9 unit(s)*
- Sign up for Comprehensive Exam in the Department Office in your final semester.
- Comprehensive Exam

Total Units Required (30 units)

Computer Engineering, MS

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation

- Master's Requirements (33 units)
- Program Learning Outcomes

The MS-CMPE program provides students with an educational experience that combines electrical engineering and computer science with the best of academia, the high-tech industry, and Silicon Valley. The high-tech industry increasingly requires engineers to be equipped with both hardware and software development knowledge and skills. The program provides in-class theory with hands-on hardware design and software development exercises to give students the skills necessary to create contemporary microelectronic products that are typically embedded computing systems containing both hardware and software. Graduates with an MS in Computer Engineering can expect to find significant opportunities in digital and computer hardware design and verification, system-level software development, and prototyping and testing as well as technical support and marketing.

Class schedules are designed for the convenience of employed engineers who wish to pursue graduate work on a part-time basis.

For more information, visit <https://www.sjsu.edu/cmpe/academic/ms-cmpe/>.

Educational Objectives of the Graduate Program

To provide MS CMPE graduates with

1. advanced knowledge of the practice of computer engineering, from vision to analysis, design, validation, and deployment.
2. the ability to tackle complex engineering problems and tasks, using contemporary engineering principles, methodologies, and tools.
3. leadership skills and the ability to participate in teamwork in an environment with people of different disciplines of engineering, science, and business.
4. understanding of the ethical, economic, and environmental implications of their work, as appropriate.
5. the ability to advance successfully in the engineering profession and sustain a process of life-long learning in engineering or other professional areas.
6. the ability to communicate effectively in both oral and written forms.

Admissions Requirements

Candidates must meet all university admissions requirements. Applicants can be admitted in either classified or conditionally classified standing. If an applicant's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental requirements, the conditions will include taking preparatory courses to meet these requirements. These courses will not count as part of the master's degree program requirements.

For acceptance by the Department of Computer Engineering, the applicant must satisfy the following requirements:

- a. **Academic Background**
An applicant must have a degree equivalent to a four-year U.S. undergraduate baccalaureate degree with a GPA of 3.25 (B+) or higher in a computer-hardware related field, such as computer engineering or electrical engineering. Those with backgrounds and interests in software development should consider the MS in Software Engineering program. They will receive lower priority in admissions into the MS-Computer Engineering program than those with hardware backgrounds and interests.
- b. **Standard Test Scores**
An applicant without a baccalaureate degree from an accredited university in the United States must meet SJSU's minimum requirements on an English-Language Proficiency Exam (TOEFL or equivalent; please visit the Graduate Program Test Requirements website at GAPE for more information). The GRE is required of any applicant whose bachelor's degree was from a non-ABET-accredited program or whose bachelor's

degree GPA was beneath 3.0. Under rare circumstances, usually involving a minimum of 5 years of employment in hardware development, applicants are eligible for a waiver of the GRE test requirement.

Requirements for Advancement to Graduate Candidacy

Students may advance to candidacy after completing all admission conditions and all prerequisites for the culminating experience (refer to the MS-CMPE Student Handbook) including the Graduation Writing Assessment Requirement (GWAR). CMPE 294 satisfies the requirement in this program, although ENGR 200W will also be accepted. If a student qualifies for a university-approved GWAR waiver, they must select an additional elective class to achieve the 33-unit program requirement.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS - Computer Engineering Graduation Requirements

To obtain an MS degree in Computer Engineering, a student must meet the following requirements:

1. achieve a classified student status, i.e., a conditionally admitted student must meet the admission conditions specified in the student's admission letter;
2. complete all course requirements leading up to the culminating experience courses, as listed below.
3. complete 33 semester units of 200-level courses with a cumulative GPA of 3.0 or better. At least 27 units must be 200-level Computer Engineering courses.
Undergraduate coursework does not count towards the master's degree. Students may enhance their degree by adding internships (CMPE 298I) to their plan of study.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing CMPE 294 or ENGR 200W.

Culminating Experience (Plan A or Plan B)

All students must complete one of the following culminating experiences: thesis or project. Theses and projects are completed under the supervision of an advisor.

Plan A (Thesis)

A master's thesis includes original research on a topic approved by the thesis committee and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It undergoes a thorough review and revision process under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

A master's project is a research or development effort performed by a student individually on a topic chosen by mutual agreement between an advisor and the student. The choice of project topic is also approved by the Graduate Advisor. The individual student projects could be distinct components of a larger integrated project performed by a team of students. At the end of CMPE 295B, a project report is submitted for department review, and students present their project work in a department project exposition.

Master's Requirements (33 units)

Core (12 units)

- CMPE 200 - Computer Architecture 3 *unit(s)*
- CMPE 220 - System Software 3 *unit(s)*
- CMPE 240 - Advanced Computer Design 3 *unit(s)*

GWAR (3 units)

Complete one course (CMPE 294 is recommended):

- CMPE 294 - Computer Engineering Seminar 3 *unit(s)*
- ENGR 200W - Engineering Reports and Graduate Research 3 *unit(s)*

Area of Specialization (6 units)

Complete two courses in one of the specializations:

System Software Architecture

- CMPE 213 - Parallel Computing 3 *unit(s)*
- CMPE 214 - GPU Architecture and Programming 3 *unit(s)*
- CMPE 249 - Intelligent Autonomous Systems 3 *unit(s)*
- CMPE 281 - Cloud Technologies 3 *unit(s)*
- CMPE 283 - Virtualization Technologies 3 *unit(s)*

Network Systems

- CMPE 206 - Computer Network Design 3 *unit(s)*
- CMPE 207 - Network Programming and Application 3 *unit(s)*
- CMPE 208 - Network Architecture and Protocols 3 *unit(s)*
- CMPE 209 - Network Security and Applications 3 *unit(s)*
- CMPE 210 - Software-defined Networks and Network Functions Virtualization 3 *unit(s)*

Embedded Systems

- CMPE 242 - Embedded Hardware Design 3 *unit(s)*
- CMPE 243 - Embedded Systems Applications 3 *unit(s)*
- CMPE 244 - Embedded Software 3 *unit(s)*
- CMPE 245 - Embedded Wireless Architecture 3 *unit(s)*

- CMPE 265 - High Speed Digital System Design 3 *unit(s)*

Cybersecurity

- CMPE 209 - Network Security and Applications 3 *unit(s)*
- CMPE 211 - Advanced Network Security in IoT 3 *unit(s)*
- CMPE 219 - Cybersecurity Clinics with HCI 3 *unit(s)*
- CMPE 279 - Software Security Technologies 3 *unit(s)*
- CMPE 287 - Software Quality Assurance and Testing 3 *unit(s)*

Machine Learning Engineering

- CMPE 252 - Artificial Intelligence and Data Engineering 3 *unit(s)*
- CMPE 255 - Data Mining 3 *unit(s)*
- CMPE 256 - Advanced Data Mining 3 *unit(s)*
- CMPE 257 - Machine Learning 3 *unit(s)*
- CMPE 258 - Deep Learning 3 *unit(s)*
- CMPE 260 - Reinforcement Learning 3 *unit(s)*

Approved Electives (9 units)

Complete one course (3 units) of any 200-level CMPE courses in the Area of Specialization except the first-choice specialization.

Complete two courses (6 units) of any 200-level CMPE courses except 295 or 299 culminating experience classes, 298, or 298i. To take graduate courses in other departments, students need to consult with the MS CMPE graduate advisor.

Culminating Experience (6 units)

Complete One Option (Plan A or Plan B)

Plan A (Thesis) (6 units)

- CMPE 299A - Master Thesis I 3 *unit(s)*
- CMPE 299B - Master Thesis II 3 *unit(s)*

Plan B (Project) (6 units)

- CMPE 295A - Master Project I 3 *unit(s)*
- CMPE 295B - Master Project II 3 *unit(s)*

Total Units Required (33 units)

Elective courses must be planned in consultation with the Graduate Advisor.

If the student qualifies for a university-approved GVAR waiver, they may elect to substitute the CMPE 294 (or ENGR 200W) requirement with an elective.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Electrical Engineering, MS

- Admissions Requirements
- Requirements for Graduation
- Master's Requirements (33 units)
- Program Learning Outcomes

The Master of Science in Electrical Engineering, offered by the Department of Electrical Engineering, is designed to prepare our graduates for the dynamic global society. Our programs have made us a leading provider of engineering talent to Silicon Valley's high-tech industry. The curriculum is continually updated to keep abreast of advances in the engineering profession and industry. Along with the traditional emphasis on fundamental scientific knowledge, current engineering practice using computer design tools is integrated into the curriculum. Information about the MSEE program can be found at <https://www.sjsu.edu/ee/>.

Admissions Requirements

Candidates for admission apply through the CSU admissions portal, calstate.edu/apply. Applicants must meet all admission requirements.

Follow the link for general information about the university admission requirements and process. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirement webpage at GAPE.

Requirements for Admission to Classified Standing

To be admitted to classified standing, an applicant must possess a baccalaureate degree with a major in Electrical or Computer Engineering or its equivalent and a grade point average of 3.0 or better on a 4.0 scale from a U.S. university with an ABET-accredited Electrical or Computer Engineering program.

Requirements for Admission to Conditionally Classified Standing

Some applicants who do not qualify for classified standing may be admitted as conditionally classified graduate students. They must petition for a change to classified status after completing the common core graduate courses with grades of "B" or better. A maximum of 15 units earned before the student attains the classified status may be counted towards the MSEE degree requirements.

Applicants with a BSEE Degree from an Accredited University in the U.S.

An applicant with a BS degree in Electrical or Computer Engineering from an accredited university within the United States, whose GPA is 3.0 or above on a 4.0 scale, will be admitted to classified standing (GRE is not required). An applicant with a GPA lower than 3.0 but higher than 2.75 on a 4.0 scale is required to submit their general GRE scores with the application. If accepted, the applicant will be admitted as a conditionally classified graduate student. Such a student may petition for a change to classified standing after successfully completing two of the following

four courses: EE 210, EE 221, EE 250, or EE 275 with a "B" or better grade in each course. Information about GRE score requirements can be found at Graduate Program Test Requirement.

Applicants with a BS Degree in Another Branch of Engineering or Science from an Accredited University in the U.S.

An applicant who possesses a baccalaureate degree in another branch of Engineering or in Physics or Mathematics with a minimum GPA of 3.0 on a 4.0 scale is required to submit his/her general GRE scores with the application. If accepted, the applicant will be admitted as a conditionally classified graduate student. Such an applicant may be required to complete four undergraduate courses at the beginning of the graduate program. The four undergraduate courses are selected from EE 110, EE 112, EE 118, EE 120, EE 122, EE 124, and EE 140. Following the completion of the undergraduate courses, the student must successfully complete two of the four graduate core courses, EE 210, EE 221, EE 250, or EE 275 with a "B" or better grade in each course. He or she may not enroll in more than two other graduate courses before completing these requirements. Units for the undergraduate courses are not counted toward the MSEE degree unit requirement. Information about GRE score requirements can be found at Graduate Program Test Requirement.

Applicants with Undergraduate Degrees from Foreign Universities

An applicant with a baccalaureate degree in Electrical, Electronic, Telecommunications, Computer Engineering, or other similar majors with a minimum GPA of 3.0 on a 4.0 scale is eligible to apply. Applicants are required to take an English-proficiency test (TOEFL or equivalent) and the general Graduate Record Exam (GRE). Information about minimum score requirements for English-proficiency tests and GRE can be found at Graduate Program Test Requirement. In general, there are no hard cut-offs on the GRE scores but the scores will be used with applicants' degree and GPA to rank the candidates for admission.

Applicants satisfying these requirements may be admitted as conditionally classified graduate students with the condition that they complete two of the four core graduate courses, EE 210, EE 221, EE 250, or EE 275 with a "B" or better grade in each course before enrolling in any other graduate course. However, a student with a high GPA and GRE may be admitted into classified standing.

Applicants from Other Graduate Programs within the University

A graduate student who has been admitted to another department in San José State University must complete at least one semester of work in that department before being able to transfer to the Electrical Engineering Department. A minimum GPA of 3.0 and general GRE are required. The scores will be used with applicants' degree and GPA to compare the candidate with those seeking first-time admission.

A "Change of Major Form" must first be approved by the GAPE office and the request transferred to the Electrical Engineering Department before the student may be considered for transfer into the Electrical Engineering program.

Requirements for Advancement to Graduate Candidacy

Matriculated graduate students must submit a Petition for Advancement to Graduate Candidacy a minimum of one semester prior to graduating. See the link for information about this requirement.

Students also must fulfill the Graduation Writing Assessment Requirement (GWAR) before advancing to candidacy. See the link for information about the GWAR.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Course Requirements

To meet the requirements for the MS - Electrical Engineering degree, a student must complete 33 units including GWAR with a cumulative GPA of 3.0 or better. The program provides two plans: MS thesis (Plan A) or MS Project (Plan B).

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Plan A (Thesis)

Students choosing this option must complete the MSEE Thesis Proposal course (EE 299A) or MSEE Project Proposal course (EE 297A) and MSEE Thesis course (EE 299B). The student is responsible for securing the commitment of three university faculty members, two of whom must be full-time EE faculty members, to serve as the student's thesis committee, with one full-time EE faculty member agreeing to serve as thesis committee chair. The student must write a thesis or project proposal and have it approved by the thesis committee chair or project advisor and pass the MSEE Thesis or Project Proposal course (EE 299A or EE 297A) before enrolling in EE 299B. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. The candidate for the MSEE degree must successfully pass a final oral defense of the thesis.

Plan B (Project)

The student must complete the MSEE Project Proposal course (EE 297A) or MSEE Thesis Proposal course (EE 299A) and MSEE Project course (EE 297B). The student is responsible for securing the commitment of a full-time EE faculty member to serve as MSEE Project Advisor. The student must write a project or thesis proposal and have it approved by the project advisor or thesis committee chair and pass the MSEE Project or Thesis Proposal course (EE 297A or EE 299A) before enrolling in the final MSEE Project course (EE 297B). The candidate for the MSEE degree must successfully pass a final defense of the project.

Master's Requirements (33 units)

Core Courses (9 units)

- EE 295 - Technical Writing - Engineering Ethics 3 *unit(s)* (GWAR) (*Students with GWAR waivers take an additional 3 units of electives*)

Complete Two Courses From:

- EE 210 - Linear System Theory 3 *unit(s)*

- EE 221 - Semiconductor Devices I 3 *unit(s)*
- EE 250 - Probabilities, Random Variables and Stochastic Processes 3 *unit(s)*
- EE 275 - Advanced Computer Architectures 3 *unit(s)*

Area of Specialization (9 units)

Students desiring to pursue an area of specialization not listed should consult graduate advisor.

- Device Physics, Micro and Nano Electronics
- Analog Electronics, Integrated Circuits
- Power Electronics, Energy Systems
- Communications, Signal Processing, Remote Sensing
- Control, Robotics, Autonomous Systems
- Digital Systems, Microprocessors and Computers, Embedded Systems
- Network, Network Security, Mobile Network, IoT
- Quantum Computer, Quantum Information
- Artificial Intelligence, Machine Learning, Deep Learning

Advisor Approved Electives (9 units)

Culminating Experience (6 units)

Plan A (Thesis) (6 units)

- EE 299A - MSEE Thesis Proposal 3 *unit(s)*
or EE 297A - MSEE Project Proposal
- EE 299B - MSEE Thesis 3 *unit(s)*

Plan B (Project) (6 units)

- EE 297A - MSEE Project Proposal 3 *unit(s)*
or EE 299A - MSEE Thesis Proposal
- EE 297B - MSEE Project 3 *unit(s)*

Total Units Required (33 units)

In special circumstances, a maximum of 3 units of approved courses taken outside the Electrical Engineering Department may be applied toward the MS - Electrical Engineering degree. Students who wish to take courses outside the Electrical Engineering Department must have pre-approval by the Graduate Advisor/Coordinator. In addition to the above requirements, students must satisfy all university requirements and procedures as stated in this catalog.

Engineering Management, MS

- University Admissions
- Requirements for Advancement to Candidacy for the MS - Engineering Management

- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

Engineering Management, offered by the Department of Industrial and Systems Engineering, is a specialized form of management that is concerned with the application of engineering principles to business practice. Engineering management is a career that brings together the technological problem-solving savvy of engineering and the organizational, administrative, and planning abilities of management in order to oversee complex enterprises from conception to completion.

Engineering Management programs typically include instruction in the areas of accounting, economics, project management, finance, systems engineering, mathematical modeling and optimization, quality control and six sigma, operations research, human resource management, industrial psychology, safety, and health. At SJSU, the engineering management program emphasizes quality and six sigma, statistics, fundamentals of business accounting and finance, engineering economic analysis, business ethics, supply chain engineering, and systems engineering. Through technical electives, students become knowledgeable in other aspects of business management, such as project management, human resource management, and operations research.

Additional information can be found at the MS Engineering Management website.

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MS, Engineering Management program. See the GAPE Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE. For TOEFL Requirements, see the English Language Proficiency Requirement section in this catalog.

Requirements for Admission to Classified Standing

Applicants must meet all university admission requirements. Applicants who meet the following requirements beyond university requirements will be considered for admission into the ISE Department. In addition, applicants must possess a baccalaureate degree from an ABET-accredited engineering program with a grade point average of at least 3.0 in the last 60 semester hours of upper-division work completed in all subjects and in technical subjects only. Students meeting these criteria may be admitted in classified standing; however, students may still be admitted conditionally if they need prerequisite courses for the selected option. An engineering technology degree does not satisfy the degree requirement for admission to this program.

Requirements for Admission to Conditionally Classified Standing

Applicants who do not meet the requirements for classified standing may be admitted with specific conditions as conditionally classified. An applicant whose undergraduate record indicates deficiencies in one or more technical areas and/or has a grade point average less than 3.0 in the last 60 semester hours of upper-division work completed in all subjects and in technical subjects only may be admitted for graduate work on a conditionally classified basis. Such students will be expected to satisfactorily complete additional course work before becoming classified. Any conditions stated in the admission notification must be fulfilled within the first year and before the student can be advanced to candidacy for the degree.

Students admitted in conditionally classified status may petition for classified status when course work in deficient areas has been completed, when they have satisfied the Graduation Writing Assessment Requirement (GWAR), and when their records in classes at San José State University show sufficient promise of success in the master's degree program.

Requirements for Advancement to Candidacy for the MS - Engineering Management

Students seeking the Master of Science in Engineering Management degree must meet the general university requirements for advancement to candidacy as outlined in the Academic Requirements section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. Advancement to candidacy and approval of the degree program will be handled by the Graduate Advisor. All classified graduate students must apply for advancement to candidacy after completing the GWAR and a minimum of nine units of graduate work. All MS EM students are encouraged to apply for advancement to candidacy as soon as they have completed the GWAR and three graduate courses.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students choose the Plan A (Thesis) or Plan B (Project) option as their program culminating experience. The decision as to whether to embark on a thesis or project will be made by the student in consultation with the program's assigned advisor.

Plan A (Thesis)

Students wishing to pursue the thesis option must begin by obtaining the approval of the MS, Engineering Management (MS EM) program director, and then secure the agreement of a qualified faculty member to serve as Chair of the thesis committee. The candidate must provide the name of the committee Chair to the MS EM Program Director prior to the beginning work on the thesis. The thesis and thesis process must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

The project is the expected choice for the MS, Engineering Management candidate's culminating experience. Students must begin the project by identifying a qualified faculty advisor, or by having one appointed by the MS EM program director. The advisor and the student mutually agree on the scope of the project. The advisor determines when the student has met agreed-upon project requirements and when the project report is acceptable for

submission to the MS EM program and notifies the MS EM program director of the student's satisfactory completion of the culminating experience requirement.

Master's Requirements (30 units)

Core Courses (15 units)

- ISE 200 - Financial Methods for Engineers 3 *unit(s)*
- ISE 213 - Principles of Engineering Management 3 *unit(s)*
- ISE 222 - Adv Sys Engr 3 *unit(s)*
- ISE 250 - Leading the Six Sigma Improvement Project 3 *unit(s)*
- ISE 251 - Managing the Lean Enterprise Improvement Program 3 *unit(s)* (GWAR)

Approved Electives (12 units)

Twelve units of electives selected in consultation with graduate advisor. Students take two BUS electives (6 units) and two ISE electives (6 units).

Culminating Experience (3 units)

Complete One Course From:

Plan A (Thesis)

- ISE 299 - Master's Thesis 1-4 *unit(s)* (3 *units required*)

Plan B (Project)

- ISE 298 - Special Problems 1-4 *unit(s)* (3 *units required*)

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Engineering Technology, MS

The Master of Science in Engineering Technology degree program, offered by the Department of Aviation and Technology, prepares students with advanced managerial, leadership, analytical and business-based skill sets to improve the way an organization functions. Engineering technologists gain the ability to contribute to an organization's success by improving processes and systems, identifying and meeting customers' needs and assuring high quality of products and services through application of engineering principles and proper analytical tools and technical skills.

Various organizations, from global manufacturing corporations, government organizations, and industrial enterprises to small service-oriented businesses, such as healthcare systems, manufacturing operations, network and security systems, and educational institutions, can benefit from implementing engineering technology principles and approaches. Students are required to have completed a BS in a STEM-related major such as Engineering, Physics, Mathematics or Business with a strong analytical background.

Admissions Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system. Applicants must meet all university admission requirements. See the Graduate Admissions section for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE. For TOEFL Requirements, see the Graduate Admissions section of this catalog.

Requirements for Admission to Classified Standing

The Department of Aviation and Technology admits students to the Master of Science in Engineering Technology program in Classified or Conditional Standing. Contact the department or see our admissions materials for specific application deadlines. For admission to classified standing the department requires the following:

1. A baccalaureate degree from an accredited academic institution in a technical or scientific discipline. Individuals from non-accredited or non-technical disciplines who demonstrate exceptional promise may be conditionally admitted to the graduate program;
2. Transcripts from an academic institution which verify a minimum grade point average of 3.0 in the last 60 upper-division university units;
3. Evidence of written and oral communication skills essential to meet the demands of graduate-level study and research. A well-written personal statement is often used for partial verification of these competencies; this statement should discuss the applicant's career plans and make note of how the master's degree will enhance career objectives; and
4. Foreign students must present a TOEFL score of at least 550.

Requirement for Admission to Conditionally Classified Standing

Applicants from non-technical disciplines may be conditionally admitted to the graduate program pending completion of additional undergraduate course work as prescribed by the program graduate coordinator. Students who are conditionally classified may seek admission to classified standing only after completion of nine units of graduate-level coursework with a minimum grade point average of 3.0. The individual admission letter will explain required terms and conditions for attaining Classified standing.

Requirements for Advancement to Candidacy

General university requirements for advancement to candidacy for the Master of Science degree are outlined in the Academic Regulations section of this catalog. After successfully completing a minimum of 12 graduate units, with a minimum grade point average of 3.0, and satisfied the university GVAR, students must finalize their programs of study with the guidance of the Program's Graduate Advisor.

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Successfully passing TECH 200 course meets the GWAR requirement.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

In consultation with the department graduate advisor, the candidate will develop and pursue a program of study. The candidate must successfully complete all requirements of the selected plan including the course work specified in the Master's Degree Approval Program.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students choose a Plan A (Thesis) or Plan B (Project) option as their program culminating experience.

Plan A (Thesis)

Students opting to complete a thesis enroll in six units of TECH 299. They must secure the commitment of three faculty members of the department, college or university, two of whom must be members of the faculty (permanent or part-time), to serve as members of the student's Plan A (thesis) committee, with one permanent faculty member agreeing to serve as chair. The committee must approve the student's thesis proposal for the master's degree no later than one semester prior to the end of the semester preceding the one in which enrollment in the final thesis course is planned. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will undergo a thorough review and revision process under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. In addition, the candidate for the MS degree must successfully pass a final oral defense of the thesis. This includes a one-hour professional presentation with applicable slides outlining the work performed including an introduction, background and review of the relevant previously published literature, methodology, analysis/experiment/simulation, results and discussion, followed by conclusion(s).

Plan B (Project)

Students opting to complete a project enroll in TECH 295A (3 units) and TECH 295B (3 units). They must secure the commitment of three faculty members of the department, college or university, two of whom must be members of the faculty (permanent or part-time), to serve as members of the student's Plan B (Project) committee, with one permanent faculty member agreeing to serve as chair. The committee must approve the student's project proposal for the master's degree no later than one semester prior to the end of the semester preceding the one in which enrollment in the final project course is planned. The project will include original research on a topic approved by the project committee. It will undergo a thorough review and revision process under the guidance of the candidate's project committee chair and with the assistance of the committee members. In addition, the candidate for the MS degree must successfully pass a final oral defense of the project. This includes a one-hour professional presentation with applicable slides outlining the work performed including an introduction, background and review of the relevant

previously published literature, methodology, analysis/ experiment/simulation, results and discussion, followed by conclusion(s).

Master's Requirements (30 units)

Required Courses (9 units)

- TECH 200 - Research Methods for Engineering and Technology 3 *unit(s)* (GWAR)
- TECH 230 - Six-Sigma and Continuous Improvement Systems Management 3 *unit(s)*
- TECH 233 - Design and Analysis of Experiments 3 *unit(s)*

Specialization Area (9 units)

Complete 3 courses in one Specialization Area: Smart Manufacturing or Applied Networks Systems

Smart Manufacturing Specialization

- TECH 235 - Measurement Systems and Analysis 3 *unit(s)*
- TECH 239 - Design Assurance in Product Development 3 *unit(s)*
- TECH 241 - Application of Artificial Intelligence in Manufacturing 3 *unit(s)*
- TECH 244 - Selective Laser Melting Process 3 *unit(s)*
- TECH 245 - Advanced Solid-State Welding/Joining Processes 3 *unit(s)*

Applied Network Systems Specialization

- TECH 231 - Systems Reliability and Maintainability 3 *unit(s)*
- TECH 236 - Foundations in Quality Assurance for Software 3 *unit(s)*
- TECH 273 - Computer and Network System Auditing 3 *unit(s)*

Approved Electives (6 units)

Complete 2 courses from the following

- TECH 172 - Database Server System Management 3 *unit(s)*
- TECH 174 - Blockchain Technology and Applications 3 *unit(s)*
- TECH 175 - Industrial Internet of Things (IIoT) 3 *unit(s)*
- TECH 176 - Machine Learning Technology and Applications 3 *unit(s)*
- TECH 177 - Data Science in Industrial Systems Management 3 *unit(s)*
- TECH 234 - Quality Systems Management: ISO 9000 and 14000 3 *unit(s)*
- TECH 236 - Foundations in Quality Assurance for Software 3 *unit(s)*
- TECH 251 - Cybersecurity Operations Management 3 *unit(s)*
A graduate level course (from another department) with Graduate Advisor's approval

Culminating Experience (6 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- TECH 299 - Master's Thesis 2-6 *unit(s)* (6 units required)

Plan B (Project)

- TECH 295A - Engineering Technology Project I (3 units)
- TECH 295B - Engineering Technology Project II (3 units)

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Engineering, MS

- Requirements for Admission to Classified Standing
- Requirements for Admission to Conditionally Classified Standing
- Requirements for Advancement to Candidacy
- Completing Requirements for the MS - Engineering
- Master's Requirements (30 units)
- Program Learning Outcomes

The MS Engineering degree by the Interdisciplinary Engineering Program offers practicing engineers the opportunity to develop a wide range of knowledge and skills needed to function in today's complex industrial environment. The program is designed to provide flexibility for students who need coursework that is truly interdisciplinary and not available through the other engineering programs in the college. The MS-Engineering programs typically include courses from at least three different programs in the College of Engineering and may also use courses in other colleges. Students are required to submit a program-of-study proposal by the end of their first semester enrolled in MSE. Additional off-campus specialized MSE programs are offered at local industry sites.

Requirements for Admission to Classified Standing

Students seeking admission to MS Engineering programs must meet the general university requirements for admission as outlined in this catalog. In addition, the applicant must possess a baccalaureate degree from an ABET-accredited engineering program with a grade point average of at least 3.0 in the last 60 semester hours of upper-division work completed in all subjects and in technical subjects only. Students meeting these criteria may be admitted in classified standing; however, students may still be admitted conditionally if they need prerequisite courses for the selected specialization. More information on admission requirements can be found on the program website.

Requirements for Admission to Conditionally Classified Standing

A graduate applicant whose undergraduate record indicates deficiencies in one or more technical areas and/or has a grade point average less than 3.0 in the last 60 semester hours of upper-division work completed in all subjects and in technical subjects only may be admitted for graduate work on a conditionally classified basis. Such students will be expected to satisfactorily complete additional coursework before becoming classified. Students admitted in conditionally classified status may petition for classified status when coursework in deficient areas has been completed, when they have satisfied the Graduation Writing Assessment Requirement (GWAR), and when their records in classes at San José State University show sufficient promise of success in the master's degree program.

Requirements for Advancement to Candidacy

Students seeking the MS Engineering degree must meet the general university requirements for candidacy as outlined in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, the applicant must demonstrate an aptitude for advanced professional work in engineering as measured by instructor appraisals, analysis of previous academic work, or other appropriate means. Advancement to candidacy and approval of programs will be handled by a faculty committee and the student's advisor.

Completing Requirements for the MS - Engineering

The normal course of study for the MS-Engineering degree consists of 30 semester hours of approved work in the following areas:

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core Courses (6 units)

- ENGR 201 - Engineering Analysis 3 *unit(s)*
- ENGR 202 - Systems Engineering 3 *unit(s)* (GWAR)

Specialized Core (3-9 units)

Approved Specialization Electives (9-15 units)

Culminating Experience (3-6 units)

Complete One Sequence From:

Master's Thesis Sequence (Plan A)

- ENGR 281 - Master's Project/Thesis Preparation Seminar 1 *unit(s)*
- ENGR 299 - Master's Thesis 1-6 *unit(s)*

Master's Project Sequence 1 (Plan B)

- ENGR 281 - Master's Project/Thesis Preparation Seminar 1 *unit(s)*
- ENGR 298 - Master's Project 2 *unit(s)*

Master's Project Sequence 2 (Plan B)

- ENGR 295A - Master Project I 3 *unit(s)*
- ENGR 295B - Master Project II 3 *unit(s)*

Total Units Required (30 units)

Human Factors/Ergonomics, MS

- Admission Requirements
- Requirements for Admission to Classified Standing
- Requirements for Admission to Conditionally Classified Standing
- Requirements for Advancement to Candidacy for the MS - Human Factors/Ergonomics
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Department of Industrial and Systems Engineering administers the Master of Science in Human Factors/Ergonomics (HF/E) degree program. This is a cooperative program involving the Departments of Industrial and Systems Engineering, Psychology, Industrial Design, and Kinesiology.

Human factors/ergonomics is the discipline concerned with the development and application of human-system interface technology to systems analysis, design, and evaluation. This technology encompasses human-machine (hardware ergonomics), human-task (workplace ergonomics), human-environment (environmental ergonomics), human-software (cognitive ergonomics) and organizational-machine (macro-ergonomics) interfaces. Practitioners are engaged in developing design specifications, guidelines, methods, and tools. They also apply human-system interface technology to ensure that work systems are compatible with the characteristics of the humans who operate, maintain, or otherwise interact with them. Their efforts include improving the operability, maintainability, usability, comfort, safety and health characteristics of systems to improve human and system effectiveness and to reproduce the potential of injury and error (adapted from remarks published by H. Holbrook, 1995-96 President, Human Factors and Ergonomics Society, HFES Bulletin, January 1996).

This program prepares students for practice in this emerging profession through an interdisciplinary course sequence that emphasizes theory, practical applications, and research. HF/E students take a group of five core courses from several different SJSU departments and elective courses in topics of their choosing. A one-semester weekly seminar is required of all students. The program culminates in a thesis or project.

Additional information can be found on the Human Factors/Ergonomics Program website.

Admission Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MS, Human Factors/Ergonomics program. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the English Language Proficiency Requirement section in this catalog.

Requirements for Admission to Classified Standing

Applicants must meet all university admission requirements. Applicants who meet the following requirements beyond university requirements will be considered for admission into the ISE Department. Applicants for classified standing must have completed a BS or BA degree in Psychology, Industrial Engineering, Occupational Therapy, Industrial Design, Kinesiology, or other related fields at an accredited institution. A grade point average of 3.0 ("B") or better in the last two years of academic work is preferred. Applicants for classified standing will also be expected to have completed upper-division courses in statistics, cognition, and perception.

Requirements for Admission to Conditionally Classified Standing

Applicants who do not meet the requirements for classified standing may be admitted with specific conditions as conditionally classified; any conditions stated in the admission notification must be fulfilled within the first year and before the student can be advanced to candidacy for the degree. If the conditions are not fulfilled, the program reserves the right to dismiss the student from the program by a process known as Administrative Academic Disqualification (see Section 41300.1, Title 5, California Code of Regulations).

Requirements for Advancement to Candidacy for the MS - Human Factors/Ergonomics

Students seeking the Master of Science degree in Human Factors/Ergonomics must meet the general all-university requirements for candidacy as outlined in the Academic Requirements section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, the applicant must demonstrate an aptitude for advanced professional work in human factors/ergonomics, as measured by instructor appraisals, analysis of previous academic work, or other appropriate means. Advancement to candidacy and approval of programs will be handled by the student's graduate advisor.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must satisfy the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

The decision as to whether to embark on the project (Option B) or Thesis (Option A) path for the culminating experience will be made by the student in consultation with the program's assigned advisor.

Plan A (Thesis)

Students wishing to pursue the thesis option must begin by obtaining the approval of the HF/E program Director and then by securing the agreement of a qualified faculty member to serve as Chair of the candidate's thesis committee.

The name of the committee Chair must be provided to the HF/E program Director prior to the candidate beginning work on the thesis. The thesis and thesis process must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

The project is the expected choice for the HF/E candidate's culminating experience. Students must begin the project by identifying a qualified faculty advisor, or one will be appointed by the HF/E Program Director. The advisor and the student mutually agree on the project's scope. The advisor determines when the student has met the agreed-upon project requirements and when the project report is acceptable for submittal to the HF/E program, and notifies the HF/E program Director of the student's satisfactory completion of the requirement.

Three (3) elective courses must be planned in consultation with the Graduate Advisor. Electives may be selected from a wide range of graduate courses offered on the SJSU campus in industrial engineering, psychology, kinesiology, and other departments. Course descriptions can be found under the listings for the respective departments elsewhere in this catalog. The program develops and offers its own elective courses from time to time in topics such as usability testing, human-computer interaction, safety, and others. Please see the program website for further details.

Course Requirements

Students must maintain a GPA of 3.0 or above in all courses taken in fulfilling prerequisites and the 30 graduate units required for completion of the program. The general requirements for the course completion are as follows:

Master's Requirements (30 units)

Core Courses (17 units)

- ISE 210 - Human Factors/Ergonomics 3 *unit(s)*
- ISE 212 - Human Factors Experiments 3 *unit(s)* (GWAR)
- ISE 290 - Human Factors & Ergonomics Professional Seminar 2 *unit(s)*
- KIN 266 - Principles and Concepts of Perceptual Motor Learning 3 *unit(s)*
- PSYC 273 - Seminar in Human Factors 3 *unit(s)*

Complete One Course From:

- ISE 135 - Design of Experiments 3 *unit(s)*
- ISE 202 - Design and Analysis of Engineering Experiments 3 *unit(s)*
- ISE 211 - Experiment Design for Human Factors Engr 3 *unit(s)*

Approved Electives (9 units)

Elective courses must be planned in consultation with the graduate advisor

Culminating Experience (4 units)

Plan A (Thesis) or Plan B (Project)

Complete four units from:

- ISE 298 - Special Problems 1-4 unit(s)
- PSYC 298 - Special Problems 1-6 unit(s)
- KIN 298 - Special Studies 3 unit(s)
- ISE 299 - Master's Thesis 1-4 unit(s)
- PSYC 299 - Master's Thesis 1-6 unit(s)
- KIN 299 - Master's Thesis 1-6 unit(s)

Total Units Required (30 units)

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Human Factors/Ergonomics, User Experience Concentration, MS

- Admission Requirements
- Requirements for Admission to Classified Standing
- Requirements for Admission to Conditionally Classified Standing
- Requirements for Advancement to Candidacy for the MS - Human Factors/Ergonomics, Concentration in User Experience
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Department of Industrial and Systems Engineering (ISE) administers the Master of Science in Human Factors/Ergonomics (HF/E) degree program with a Concentration in User Experience (UX). This program provides students with competency in human computer interaction (UX) through their course work and culminating project and creates a recognizable employment credential on the MS diploma from the MS HF/E program accredited by the Human Factors and Ergonomics Society (HFES). Students take 3 core courses, 3 required courses, and 2 electives in topics of their choosing. A one-semester weekly seminar is required of all students. The program culminates in a thesis or project. Additional information can be found at the Human Factors/Ergonomics Program website.

Admission Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply portal and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MS, Human Factors/Ergonomics program with User Experience Concentration. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the English Language Proficiency Requirement section in this Catalog.

Requirements for Admission to Classified Standing

Applicants must meet all university admission requirements. Applicants who meet the following requirements beyond university requirements will be considered for admission into the ISE Department. Applicants for classified standing must have completed a BS or BA degree in Psychology, Engineering, Computer Science, Industrial Design, or other related field at an accredited institution. A grade point average of 3.0 ("B") or better in the last two years of academic work is preferred. Applicants for classified standing will also be expected to have completed upper division courses in statistics, cognition, and perception.

Requirements for Admission to Conditionally Classified Standing

Applicants who do not meet the requirements for classified standing may be admitted with specific conditions as conditionally classified; any conditions stated in the admission notification must be fulfilled within the first year and before the student can be advanced to candidacy for the degree. If the conditions are not fulfilled, the program reserves the right to dismiss the student from the program by a process known as Administrative Academic Disqualification (see Section 41300.1, Title 5, California Code of Regulations).

Requirements for Advancement to Candidacy for the MS - Human Factors/Ergonomics, Concentration in User Experience

Students seeking the Master of Science degree in Human Factors/Ergonomics, Concentration in User Experience must meet the general all-university requirements for candidacy as outlined in the Academic Requirements section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled "Graduation Writing Assessment Requirement" for details. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, the applicant must demonstrate aptitude for advanced professional work in human factors/ergonomics, as measured by instructor appraisals, analysis of previous academic work or other appropriate means. Advancement to candidacy and approval of programs will be handled by the student's graduate advisor.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Culminating Experience

Students choose the Plan A (Thesis) or Plan B (Project) option as their program culminating experience. The decision as to whether to embark on a thesis or project will be made by the student in consultation with the program's assigned advisor.

Plan A (Thesis)

Students wishing to pursue the thesis option must begin by obtaining the approval of the HF/E program Director, and then secure the agreement of a qualified faculty member to serve as Chair of the thesis committee. The candidate must provide the name of the committee Chair to the HF/E Program Director prior to the beginning work on the thesis. The thesis and thesis process must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines (pdf). The thesis

will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

The project is the expected choice for the HF/E candidate's culminating experience. Students must begin the project by identifying a qualified faculty advisor, or by having one appointed by the HF/E program Director. The advisor and the student mutually agree on the scope of the project. The advisor determines when the student has met agreed upon project requirements and when the project report is acceptable for submission to the HF/E program, and notifies the HF/E program Director of the student's satisfactory completion of the culminating experience requirement.

Course Requirements

Students must maintain a GPA of 3.0 or above in all courses taken in fulfilling prerequisites and the 30 graduate units required for completion of the program. The general requirements for the course completion are as follows:

Master's Requirements (30 units)

Core Courses (8 units)

- ISE 210 - Human Factors/Ergonomics 3 *unit(s)*
- ISE 212 - Human Factors Experiments 3 *unit(s)* (GWAR)
- ISE 290 - Human Factors & Ergonomics Professional Seminar 2 *unit(s)*

Concentration Courses (12 units)

- ISE 215 - Usability Evaluation and Testing 3 *unit(s)*
- ISE 217 - Human Computer Interaction 3 *unit(s)*
- ISE 218 - Interaction Design I 3 *unit(s)*
- ISE 220 - Interaction Design II 3 *unit(s)*

Approved Electives (6 units)

Elective courses must be planned in consultation with the graduate advisor.

Culminating Experience (4 units)

Plan A (Thesis) or Plan B (Project)

Complete four units from:

- ISE 298 - Special Problems 1-4 *unit(s)*
- ISE 299 - Master's Thesis 1-4 *unit(s)*

Total Units Required (30 units)

Two (2) elective courses must be planned in consultation with the Graduate Advisor. Electives may be selected from a wide range of graduate courses in industrial engineering, psychology, industrial design and other departments. Course descriptions can be found under the listings for the respective departments elsewhere in this catalog. The program develops and offers its own elective courses from time to time in topics such as usability testing, human-computer interaction, safety and others. Please see the program website for further details.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Industrial and Systems Engineering, MS

The goal of Industrial and Systems Engineering is to ensure that manufacturing or service organization systems are efficient, productive, safe, and well designed against cumulative injury, and that the systems incorporate the right tools and equipment. The Master of Science in Industrial and Systems Engineering curriculum, offered by the Department of Industrial and Systems Engineering, prepares engineers for these activities and helps achieve the goals of ISE in a manufacturing or service organization. It prepares students to bridge the gap between operations and management with courses ranging from operations planning and control, quality assurance and reliability, human factors and ergonomics, human-machine interaction, information engineering, and cost-effectiveness analysis, to organizational development and total quality management. It prepares students to enter the profession immediately or to enter a PhD program.

Admissions

Applicants must submit a complete graduate application through the CSU Cal State Apply portal and meet all the university admission requirements. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE. For TOEFL Requirements, see the English Language Proficiency Requirement section in this Catalog.

Admissions to the MS ISE program include the following:

1. A bachelor's degree in Industrial or Systems Engineering from an ABET-accredited University; OR
2. A bachelor's degree in Engineering or Mathematical Sciences (including Mathematics, Statistics and Computer Science) plus ISE courses specified by the Graduate Advisor to prepare for graduate work in the Department; OR
3. A bachelor's degree in Natural Sciences plus ISE and MATH courses specified by the Graduate Advisor to prepare for graduate work in the Department.

Requirements for Admission to Classified Standing

Applicants must meet all university admission requirements. Applicants who meet the following requirements beyond university requirements will be considered for admission into the ISE Department. Students may be admitted in either classified or conditionally classified standing. Applicants for classified standing will ordinarily be expected to have completed work for the BS degree in industrial engineering (or its equivalent) at San José State University or another university with an accredited curriculum, with a grade point average of 3.0 ("B") or better in the last 60 units.

Requirements for Admission to Conditionally Classified Standing

Applicants who do not have a baccalaureate degree in industrial engineering (or equivalent), but who meet university requirements for graduate admission and whose academic records or professional achievements give promise of satisfactory performance in graduate study in industrial engineering, may be admitted to Conditionally Classified standing. Applicants whose baccalaureate degrees are not in industrial engineering will be required to take additional courses (prerequisites), which will not be counted in the graduate degree program for the MS - Industrial and Systems Engineering. The GRE General Test is not required.

Requirements for Advancement to Candidacy

Students seeking MS degrees in the College of Engineering must meet the general university requirements for candidacy as outlined in the Academic Requirements section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, the candidate must demonstrate an aptitude for advanced professional work in industrial engineering, as measured by instructor appraisals, analysis of previous academic work or other appropriate means. Advancement to candidacy and approval of programs will be handled by a faculty committee and the student's advisor.

Requirements for Graduation

Completing Requirements for the MS - Industrial and Systems Engineering

Students who have been advanced to candidacy for master's degrees in engineering must thereafter maintain grade-point averages of 3.0 ("B") or better in all work taken in the graduate program, and in the minimum 30 semester units of approved graduate work. All students are required to complete a thesis, project, or pass a comprehensive examination covering either their graduate course work or major project. The general requirements for the MS - Industrial and Systems Engineering include completion of at least 30 semester hours of approved work. The course requirements consist of three core courses, four courses in a specialty area, one elective, one GWAR elective course and a culminating experience (thesis, project or comprehensive exam). Four specialty areas are offered: Production and Quality Assurance, Human Factors Engineering, Healthcare and Service Systems Engineering, and Supply Chain and Logistics Engineering.

Culminating Experience

Plan A (Thesis)

The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee, which consists of the chair and two other faculty members of the Department, College or University.

Plan B (Project)

The main purpose and hence the main scope of the MS project is to apply knowledge learned in a student's graduate study to a real-world problem, either identified in a current industrial or business setting as a need for improvement or in an academic setting in anticipation of opportunities for potential improvement. In either case, the amount of work must at least be commensurate with a three-unit graduate lecture course. Although creating new knowledge is not expected in the project, most effective application of the knowledge learned in the student's entire graduate program is.

The MS project should be an individual project. With special approval by the Graduate Advisor, a project whose scope is too large for one student can be pursued as a set of multiple MS projects. However, the scope of work for each student must be clearly defined and separated with respect to that of the other student(s). At the end of the MS Project, each student must complete and submit an individual project report and must give an individual presentation. The student earns credit (i.e., CR) for the MS Project if and only if the project has been successfully completed and the project report and the project presentation have been satisfactorily delivered. It will be written under the guidance of the candidate's project committee advisor, with the assistance of the thesis committee, which consists of the chair and another faculty member of the Department, College or University.

Plan B (Comprehensive Exam)

The Comprehensive Exam is a five-hour exam covering three core courses and two elective courses. It is an open-book and open-notes exam. Students in this option take a third elective course (amounting to a total of 9 units of approved electives).

Master's Requirements (30 units)

Graduation Writing Assessment Requirement (GWAR) (3 units)

Successful completion of the following courses satisfies GWAR, which is required for advancement to candidacy.

There are other ways to satisfy GWAR, but they require the addition of an elective selected in consultation with the graduate advisor. For information on Graduation Writing Assessment Requirement (GWAR).

- ISE 202 - Design and Analysis of Engineering Experiments 3 *unit(s)* (GWAR)
- ISE 212 - Human Factors Experiments 3 *unit(s)* (GWAR)
- ISE 251 - Managing the Lean Enterprise Improvement Program 3 *unit(s)* (GWAR)
- ISE 270 - Information Engineering 3 *unit(s)* (GWAR)

Core ISE Courses (9 units)

- ISE 230 - Advanced Operations Research 3 *unit(s)*
- ISE 235 - Quality Assurance and Reliability 3 *unit(s)*
- ISE 240 - Analytics for Systems Engineering 3 *unit(s)*

Courses in an ISE Specialty Area (12 units)

Four Courses from one of the following four specialty areas:

- a. production and quality assurance,
- b. human factors engineering,
- c. supply chain and logistics engineering, or
- d. healthcare and service systems engineering

Approved Electives (3 units)

Courses selected from other ISE specialty areas or approved by the graduate advisor. The following courses may not be used as electives for the MS ISE: ISE 205, ISE 233, and ISE 244.

Culminating Experience (3 units)

Complete one option (Plan A Thesis, Plan B Project, or Plan B Comprehensive Exam):

Plan A (Thesis)

- ISE 299 - Master's Thesis *1-4 unit(s) (3 units required)*

Plan B (Project)

- ISE 298 - Special Problems *1-4 unit(s) (3 units required)*

Plan B (Comprehensive Exam)

- Five-hour exam covering three core courses and two elective courses. Students in this option take a third elective course (a total of 9 units approved electives)

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Industrial and Systems Engineering, Operational Analytics Concentration, MS

The Industrial and Systems Engineering Department at SJSU administers the Master of Science in Industrial and Systems Engineering (MS ISE) degree program with a concentration in Operational Analytics. This program provides students with competency in data analytics methods along with fundamental knowledge in industrial and systems engineering through coursework and a culminating project. The students take 6 core courses, and 3 electives. The program culminates in a thesis or project. Additional information can be found on the MS ISE website.

Admissions

Applicants must submit a complete graduate application through the CSU Cal State Apply portal and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MS Industrial and Systems Engineering program, Operational Analytics Concentration. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the English Language Proficiency Requirement section in this Catalog.

Admissions to the MS ISE Operational Analytics Concentration will require the same departmental requirements as the MS ISE program which are listed as follows:

1. A bachelor's degree in Industrial or Systems Engineering from an ABET-accredited University; OR
2. A bachelor's degree in Engineering or Mathematical Sciences (including Mathematics, Statistics, and Computer Science) plus ISE courses specified by the Graduate Advisor to prepare for graduate work in the Department; OR
3. A bachelor's degree in Natural Sciences plus ISE and MATH courses specified by the Graduate Advisor to prepare for graduate work in the Department.

Requirements for Admission to Classified Standing

Applicants must meet all university admissions requirements. Applicants who meet the following requirements beyond university requirements will be considered for admission into the ISE Department. Applicants for classified standing will ordinarily be expected to have completed work for the BS degree in industrial engineering (or its equivalent) at San Jose State University or at another university with an accredited curriculum, with a grade point average of 3.0 (B) or better in the upper division work.

Requirements for Admission to Conditionally Classified Standing

If the student's preparation for advanced graduate work is inadequate, they may be admitted with conditionally classified standing, and be required to take the necessary preparatory courses to become classified. Such courses will not ordinarily count towards the Master's degree program requirements.

Students who are admitted on a conditionally classified basis may complete a "Change of Classification in Graduate's Program" petition immediately upon completion of specified conditions. While in the conditionally classified standing, the student can take graduate ISE courses that do not require any prerequisites that have not yet been completed.

Requirements for Advancement to Graduate Candidacy

Students seeking the Master of Science degree in Industrial and Systems Engineering concentration in Operational Analytics must meet the general university requirements for advancement to candidacy as outlined in the Academic Requirements section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled "Graduation Writing Assessment Requirement" for details. Courses that satisfy the GWAR are listed in the course requirements for the program. Advancement to candidacy and approval of programs will be handled by the student's graduate advisor.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Culminating Experience

Students choose either Plan A (Thesis) or Plan B (Project) option as their program culminating experience. The decision to embark on a thesis or project will be made by the student in consultation with the program's assigned advisor.

Plan A (Thesis)

Students wishing to pursue the thesis option must begin by obtaining the approval of the MS ISE program Director, and then secure the agreement of a qualified faculty member to serve as chair of the thesis committee. The candidate must provide the name of the committee chair to the MS ISE Program Director prior to working on the thesis. The thesis and thesis process must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

It is expected that most students will choose the Plan B (Project) option as the MS ISE culminating experience. Students must begin the project by identifying a qualified faculty advisor, or by having one appointed by the MS ISE Operational Analytics Program Director. The advisor and the student mutually agree on the scope of the project. The advisor determines whether the student has met agreed upon project requirements and when the project report is acceptable for submission to the MS ISE Operational Analytics concentration, and notifies the program director of the student's satisfactory completion of the culminating experience requirement.

Course Requirements

Students must maintain a GPA of 3.0 or above in all courses taken in fulfilling prerequisites and the 30 graduate units required for completion of the program. The general requirements for the course completion are as follows:

Master's Requirements (30 units)

Core Courses (18 units)

- ISE 202 - Design and Analysis of Engineering Experiments 3 *unit(s)* (GWAR)
- ISE 205 - Data Ethics 3 *unit(s)*
- ISE 230 - Advanced Operations Research 3 *unit(s)*
- ISE 233 - Operational Data Analysis for Industrial Systems 3 *unit(s)*
- ISE 240 - Analytics for Systems Engineering 3 *unit(s)*
- ISE 244 - AI Tools and Practice for Systems Engineering 3 *unit(s)*

Approved Electives (9 units)

Complete 3 courses. Elective courses must be planned in consultation with the graduate advisor.

- ISE 234 - Electricity Markets & Power Systems Analytics 3 *unit(s)*
- ISE 235 - Quality Assurance and Reliability 3 *unit(s)*
- ISE 241 - Advanced Operations Planning and Control 3 *unit(s)*
- ISE 243 - Advanced Supply Chain Analytics 3 *unit(s)*
- ISE 245 - Advanced Supply Chain Engineering 3 *unit(s)*
- ISE 247 - Logistics for Supply Chain 3 *unit(s)*
- ISE 265 - Advanced System Simulation 3 *unit(s)*

Culminating Experience (3 units)

Complete one option (Plan A Thesis or Plan B Project).

Plan A (Thesis)

- ISE 299 - Master's Thesis *1-4 unit(s) (3 units required)*

Plan B (Project)

- ISE 298 - Special Problems *1-4 unit(s) (3 units required)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Materials Engineering, MS

- Requirements for Admission
- Requirements for Candidacy
- Major Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The MS Materials Engineering program is offered by the Department of Chemical and Materials Engineering. The program provides advanced study of materials engineering topics with an emphasis on both the fundamental and applied aspects. A multidisciplinary approach to education is evident in the materials engineering program's specialization areas of semiconductor processing, polymers, ceramics, structural materials, and biomaterials. Elective courses are also available in science, business, and other engineering fields. This broad-based, multi-disciplinary educational program has proven to be an important factor for a student's future success including leading Silicon Valley companies and in Ph.D. programs. Class schedules are designed for the convenience of employed engineers who wish to pursue graduate work on a part-time basis.

Faculty are actively involved in research areas including electronic and magnetic materials, nanomaterials, energy materials, structural materials, computations, polymers, composites, and biomaterials. Research activity is sponsored by local industries as well as by government funding agencies.

The MS Materials Engineering program welcomes students with undergraduate degrees in a variety of other engineering and science disciplines.

Department Website: www.sjsu.edu/cme

Department Email: chemical-materials-engineering@sjsu.edu

Requirements for Admission

Students can be admitted with conditionally classified standing if they have a MATE degree from a US accredited university in which they obtained a 2.7-2.99 GPA in the last 60 units; a MATE degree from a non-US institution; or if they have a BS degree in a related discipline, such as chemical engineering, chemistry, biology, or physics from an accredited institution. Students with conditionally classified standing will take a series of transition courses. Once these are completed satisfactorily, students can petition from classified standing. For more information on the transition courses, see the department website.

Requirements for Candidacy

Students must meet the university requirements for candidacy which includes successful completion of the Graduation Writing Assessment Requirement (GWAR). The University requires that all graduate students meet the Graduation Writing Assessment Requirement as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Major Requirements

To meet the requirements for the MS - Materials Engineering degree, a student must complete 30 units of approved courses. Students must achieve a minimum of a "C" in each course and a cumulative GPA of 3.0 or better. Students should select a Culminating Experience in consultation with their SJSU research advisor, and a written thesis or project report and an oral defense of their thesis or project must be completed.

Graduation Writing Assessment Requirement

Students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students in the MS, Chemical Engineering program will complete MATE 280 and MATE 281 and may complete 1-unit of MATE 298/MATE 298I or MATE 299/MATE 299I through their choice of a graduate project or master's thesis, respectively.

Thesis Requirements

Students opting to complete a master's thesis are responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the thesis committee chair. The student must also secure the commitments of two additional committee members, one of whom must be a full or part-time SJSU faculty member, to serve as the student's thesis committee. If the student is completing their thesis research off-site, then one person of their thesis committee must be at least a supervisor-level employee from that off-site facility. The student must write a thesis proposal and have it approved by the thesis committee in order to pass MATE 281. MATE 299 is taken in the semester the student expects to complete their final oral and written defense which will serve as their culminating experience. The MS candidate must successfully pass an oral defense and complete an approved thesis report in order to receive credit for MATE 299. Students must be enrolled in courses every semester with the exception of an approved leave of absence for one semester. Students who have finished all their 30 units with the exception of an RP grade in MATE 299 are eligible for enrollment in CHE 1290R for a reduced tuition fee. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Project Requirements

Students opting to complete a graduate project are responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the project committee chair. The student must also secure the commitments of an additional committee member to serve as the student's project committee. If the student is completing their thesis project research off-site, then one person of their project committee must be at least a supervisor-level employee from that off-site facility. The student must write a project proposal and have it approved by the project committee in order to pass MATE 281. MATE 298 is taken in the semester the student expects to complete their final oral defense and written project report, which will serve as their culminating experience. The MS candidate must successfully pass an oral and defense and complete an approved written project report in order to receive credit for MATE 298. Students must be enrolled in courses every semester with the exception of an approved leave of absence for one semester. Students who have finished all their 30 units with the exception of an RP grade in MATE 298 are eligible for enrollment in CHE 1290R for a reduced tuition fee.

Master's Requirements (30 units)

Core Courses (15 units)

- CHE 200 - Research Methods 3 *unit(s)* (GWAR)
- MATE 205 - Advanced Mechanical Behavior of Solids 3 *unit(s)*
- MATE 215 - Solid State Materials Engineering 3 *unit(s)*
- MATE 241 - Advanced Methods of Materials Characterization 3 *unit(s)*
- MATE 251 - Advanced Solid State Thermodynamics 3 *unit(s)*

Approved Electives (9 units)

9 units of electives selected in consultation with a graduate advisor. At least one technical elective needs to be an approved 200-level course.

Only students who are doing research on campus may be eligible for MATE 282. MATE 282 may be taken 2 times for a maximum of 6 units of technical elective credit. *Only one section of MATE 280/MATE 280I/MATE 282 may be taken per semester.*

Culminating Experience (6 units)

- MATE 281 - MS Thesis/Project Preparation Seminar 3 *unit(s)*
- MATE 280 - Graduate Research OR MATE 280I - Graduate Research Internship 2 *unit(s)*

Complete one course for 1 unit:

- MATE 298 - MS Research/Project 1-2 *unit(s)* (1 *unit* required)
- MATE 298I - Master's Project Internship 1-2 *unit(s)*
- MATE 299 - Master's Thesis 1-3 *unit(s)*
- MATE 299I - Master's Thesis Internship 1-3 *unit(s)*

Total Units Required (30 units)

Mechanical Engineering, MS

- Educational Objectives for Graduate Program

- Admission Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Mechanical Engineering graduate program, offered by the Department of Mechanical Engineering, is designed to afford ample opportunity for working engineers to continue their education. Courses and scholarly activities in such areas as computational fluid dynamics, thermodynamics, heat transfer, rigid-body dynamics, robotics, vibrations, product design, finite element methods, computer-aided mechanical engineering design and optimization, controls and manufacturing engineering and mechatronic systems engineering can lead to a degree of Master of Science in Mechanical Engineering (MSME).

For more information visit the program MSME program website.

Educational Objectives for Graduate Program

The Master of Science in Mechanical Engineering degree program provides students with:

1. A strong foundation beyond the undergraduate level in their chosen focus area as well as in mathematics, basic science and engineering fundamentals, that allows them to successfully compete for technical engineering positions in the local, national and global engineering market, advance in their current position or pursue doctoral studies.
2. Professional and lifelong learning skills to be able to apply and extend theory to solve practical contemporary engineering problems.
3. The expertise necessary to design mechanical engineering systems with a possible specialization in areas such as energy systems, thermal management of electronic systems, electronics packaging and reliability, finite element analysis and CAD, mechatronics and MEMS, product design, robotics, automation, and manufacturing.
4. Strong verbal and written communication skills, including the ability to comprehend and write technical documents.
5. Ability to think and work independently to perform design and in-depth analysis in solving open-ended mechanical engineering problems.

Admission Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the Mechanical Engineering Program. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English Language Proficiency (ELP) test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Admission to Classified Standing

Students desiring to pursue a Master of Science in Mechanical Engineering must meet all the university admission requirements and satisfy each of the following requirements for admission to classified standing:

1. A Bachelor of Science degree from an engineering department accredited by the Accreditation Board of Engineering and Technology (ABET) or equivalent. Special programs can be developed for those with degrees from other related disciplines. These programs must be approved by the Graduate Program Advisor.
2. A minimum grade point average (GPA) of 3.0 on a 4.0 scale over the last 60 semester units completed in engineering and/or science.
3. Applicants from non-ABET accredited Mechanical Engineering programs must have obtained minimum GRE scores as stipulated on the Graduate Program Test Requirements webpage.

Admission to Conditionally Classified Standing

Applicants whose records show certain deficiencies, such as in GPA or having a non-ME undergraduate major, may be admitted to conditionally classified standing. The Mechanical Engineering Graduate Program Advisor should be contacted for this purpose. Conditionally classified students may later initiate petitions for classified standing in the program when such deficiencies have been removed and their records show promise of success in the degree program. The individual admission letter will explain the required terms and conditions for attaining Classified standing.

Requirements for Advancement to Graduate Candidacy

Prior to registering for the first time (or upon reentering), a student should consult with the Mechanical Engineering Graduate Program Advisor. A schedule of courses will be developed at this time. Students admitted as conditionally classified must satisfy the requirements listed on their letter of acceptance and then apply to GAPE for a change of classification. Students who have completed matriculation and received classified standing in a master's degree curriculum must next be advanced to candidacy for the degree.

A student may advance to candidacy after completing a minimum of 9 units of graded work as a graduate student in 100- or 200-level courses acceptable to the department in which the degree is sought as well as satisfying all other university requirements for advancement to candidacy. Both the university overall GPA and the GPA in courses listed on the MSME Candidacy Form must be at least 3.0 on a scale of 4.0.

If a student's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental requirements, it will be necessary to take the preparatory courses to meet these requirements. Such courses will not be counted as part of the master's degree program requirements.

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy.

Students must have their advancement to candidacy approved before starting the first semester of their master's project or thesis classes (ME 295A or ME 299).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Department Graduation Requirements

The MS program in Mechanical Engineering consists of 30 semester units of approved work as follows:

- 9 units of required core courses for the degree.
- 3 units of the 9-unit core satisfy the Graduate Writing Requirement (GWAR).
- 15 units of elective courses, which ordinarily must be 200-level courses in Mechanical Engineering. With approval by the Graduate Program Advisor, a student may apply up to 6 units of elective coursework from undergraduate (upper division) SJSU Mechanical Engineering electives or graduate courses from other departments, colleges, or universities.
- 6 units of thesis (Plan A) or project (Plan B).

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students choose a Plan A (Thesis) or Plan B (Project) as their program culminating experience.

Plan A (Thesis)

Plan A requires two semesters of ME 299, 3 units each. The thesis will include original research on a topic approved by the thesis committee and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will undergo a thorough review and revision process under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. In addition, an open examination (oral defense) will be conducted by the student's thesis committee.

Plan B (Project)

With Plan B, the master's project sequence of ME 295A for 3 units followed by ME 295B for 3 units is required. In addition, an open examination (oral defense) will be conducted by the student's project committee.

Master's Requirements (30 units)

Core Courses (9 units)

- ME 230 - Advanced Mechanical Engineering Analysis 3 *unit(s)*
- ME 273 - Finite Element Methods in Engineering 3 *unit(s)*

Complete One from the Following:

Students who have a GWAR waiver can replace these units with 3 elective units.

- ENGR 200W - Engineering Reports and Graduate Research 3 *unit(s)* (GWAR)
- ME 201 - Project Planning 3 *unit(s)* (GWAR)

Electives (15 units)

Elective courses must be selected in consultation with the Graduate Program Advisor

Culminating Experience (6 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- ME 299 - Master's Thesis 3 *unit(s)* (Complete six units of ME 299)
- Oral Defense

Plan B (Project)

- ME 295A - Mechanical Engineering Project I 3 *unit(s)*
- ME 295B - Mechanical Engineering Project II 3 *unit(s)*
- Oral Defense

Total Units Required (30 units)

Elective courses must be planned in consultation with the ME Graduate Program Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Software Engineering, MS

- Educational Objectives of the Graduate Program
- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (33 units)
- Program Learning Outcomes

The MSSE program, offered by the Department of Computer Engineering, provides students with an educational experience that builds on traditional computer science and engineering and takes an integrative approach to software engineering. The program integrates the forces shaping software development, including emerging technologies, with the understanding of rapidly changing technologies and architectures and their influence on software engineering processes, where large-scale design is pre-eminent, service and component integration is the standard mode of development, and there is increased globalization of the software development workforce.

The program offers specializations in *Enterprise Software Technologies, Cloud Computing and Virtualization, Software Systems Engineering, Data Science, Cybersecurity and Networking Software*.

Class schedules are designed for the convenience of employed engineers who wish to pursue graduate work on a part-time basis.

The MSSE Program welcomes students with undergraduate degrees in other engineering or science disciplines and that have strong programming skills.

Program Website: <https://www.sjsu.edu/cmpe/academic/ms-software-engineering/>.

Educational Objectives of the Graduate Program

To provide MSSE graduates with the ability to:

1. Acquire advanced knowledge of the practice of software engineering, from vision to analysis, design, validation, and deployment.
2. Tackle complex engineering problems and tasks, using contemporary engineering principles, methodologies, and tools.
3. Demonstrate leadership and the ability to participate in teamwork in an environment with different disciplines of engineering, science, and business.
4. Understand the ethical, economic, and environmental implications of their work, as appropriate.
5. Advance successfully in the engineering profession and sustain a process of life-long learning in engineering or other professional areas.
6. Communicate effectively in both oral and written forms.

Admissions Requirements

Candidates must meet all university admissions requirements. Applicants can be admitted in either classified or conditionally classified standing. If an applicant's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental requirements, the conditions will include taking preparatory courses to meet these requirements. Such courses will not count as part of the master's degree program requirements.

Applicants may be considered for admission with conditionally classified standing if they have a BS degree in any engineering or science discipline from an accredited institution. Students with conditionally classified standing will take a series of core programming courses based on their evaluation by the MSSE Graduate Advisor.

For admission with classified standing, an applicant must possess a BSSE or BSCS degree from an accredited institution with a grade point average of 3.0 or better.

The admission letter will explain required coursework, terms and conditions for removing deficiencies and attaining classified standing.

GRE scores must be submitted if an applicant's bachelor's degree is not from an ABET-accredited U.S. university degree program. Under some circumstances, a waiver of the GRE test requirement will be granted. Descriptions of the minimum GRE scores acceptable for admission and the conditions for a waiver are listed on the admissions requirements webpage. In addition, applicants who do not possess a degree from a U.S. university must achieve a minimum English-language proficiency test score as indicated on the GAPE website.

Requirements for Advancement to Graduate Candidacy

Students may advance to candidacy after completing all prerequisites assigned during admissions, the degree core courses, specialization courses, and the Graduation Writing Assessment Requirement (GWAR). MSSE program course requirements and the links to specialization course requirements are listed at www.sjsu.edu/msse.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS - Software Engineering Graduation Requirements

The Computer Engineering Department offers courses designed to provide a flexible curriculum structure that allows students to follow a course of study to meet their individual career goals. As shown below, the program consists of 33 semester units of 200-level courses with a cumulative GPA of 3.0 or better. At least 27 units must be 200-level software engineering courses, and undergraduate coursework will not count towards the master's degree unless approved by the MSSE Graduate Advisor. A detailed description of elective class requirements can be found at www.sjsu.edu/msse. Students may further their degree by adding internships (CMPE 298I) to their plan of study.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing CMPE 294 or ENGR 200W or CMPE 295W.

Culminating Experience (Plan A or Plan B)

All students must complete one of the following culminating experiences: thesis or project. Theses and projects are completed under the supervision of an advisor.

Plan A (Thesis)

A master's thesis includes original research on a topic approved by the thesis committee and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It undergoes a thorough review and revision process under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

A master's project is a research or development effort performed by a student individually on a topic chosen by mutual agreement between an advisor and the student. The choice of project topic is also approved by the Graduate Advisor. The individual student projects could be distinct components of a larger integrated project performed by a team of students. At the end of CMPE 295B, a project report is submitted for department review, and students present their project work in a department project exposition.

Master's Requirements (33 units)

Common Core (12 units)

- CMPE 202 - Software Systems Engineering 3 unit(s)
- CMPE 272 - Enterprise Software Platforms 3 unit(s)
- CMPE 255 - Data Mining 3 unit(s)

GWAR (3 units)

- CMPE 294 - Computer Engineering Seminar 3 unit(s) (GWAR)

- CMPE 295W - Master's Project 3 *unit(s)* (GWAR)
- ENGR 200W - Engineering Reports and Graduate Research 3 *unit(s)* (GWAR)

Area of Specialization (6 units)

Complete two courses from one of the specializations:

Enterprise Software Technologies

- CMPE 273 - Enterprise Distributed Systems 3 *unit(s)*
- CMPE 275 - Enterprise Application Development 3 *unit(s)*

Cloud Computing and Virtualization

- CMPE 281 - Cloud Technologies 3 *unit(s)*
- CMPE 283 - Virtualization Technologies 3 *unit(s)*

Software Systems Engineering

- CMPE 285 - Software Engineering Processes 3 *unit(s)*
- CMPE 287 - Software Quality Assurance and Testing 3 *unit(s)*

Networking Software

- CMPE 206 - Computer Network Design 3 *unit(s)*
- CMPE 207 - Network Programming and Application 3 *unit(s)*

Data Science

- CMPE 257 - Machine Learning 3 *unit(s)*
- CMPE 258 - Deep Learning 3 *unit(s)*

Cybersecurity

- CMPE 209 - Network Security and Applications 3 *unit(s)*
- CMPE 279 - Software Security Technologies 3 *unit(s)*

Approved Electives (9 units)

Elective classes can be any 200-level CMPE course except 295 or 299 culminating experience classes, 298, or 298i. Also permitted are 100-level or 200-level courses from Engineering or Science disciplines selected in consultation with the MSSE Graduate Advisor. One elective must be a specialization core class from a specialization other than the student's declared specialization.

Culminating Experience (6 units)

Complete one option (Plan A or Plan B):

Plan A (Thesis)

- CMPE 299A - Master Thesis I *3 unit(s)*
- CMPE 299B - Master Thesis II *3 unit(s)*

Plan B (Project)

- CMPE 295A - Master Project I *3 unit(s)*
or
- CMPE 295W - Master's Project *3 unit(s)* ; **and,**
- CMPE 295B - Master Project II *3 unit(s)*

Total Units Required (33 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Basic Certificate(s)

Cybersecurity Foundations Certificate

The Department of Computer Engineering offers an 18-unit Cybersecurity Foundations Certificate program to students seeking career opportunities in cybersecurity. The program aligns with the nationally defined knowledge areas and prepares the students with well-grounded fundamentals to become a professional in cybersecurity.

University Basic Certificate Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Core

- CMPE 130 - Advanced Algorithm Design 3 *unit(s)*
- CMPE 132 - Information Security 3 *unit(s)*
- CMPE 138 - Database Systems I 3 *unit(s)*
- CMPE 142 - Operating Systems Design 3 *unit(s)*

Complete One Course From:

- CMPE 148 - Computer Networks I 3 *unit(s)*
- CS 158A - Computer Networks 3 *unit(s)*

Complete One Course From:

- CMPE 181 - Internet of Things Platforms 3 *unit(s)*
- CMPE 182 - Internet of Things Security 3 *unit(s)*
- CS 158B - Computer Network Management 3 *unit(s)*

Total Units Required (18 units)

Advanced Certificate(s)

Cybersecurity Engineering Certificate

With the global threats of cyber-crime, our nation's continued security and economic prosperity depend on the availability of increasing cybersecurity workforce. The Department of Computer Engineering offers a 12-unit Cyber Security Engineering (CSE) Certificate program to students who seek career opportunities in cybersecurity and information assurance. The courses in the certificate program cover mobile-based software system, advanced topics, and project experience in information security.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Core

- CS 265 - Cryptography and Computer Security 3 *unit(s)*
- CMPE 235 - Mobile Software System Design 3 *unit(s)*
- CMPE 295B - Master Project II 3 *unit(s)*

Complete One Course From:

- CMPE 295A - Master Project I 3 *unit(s)*
- CMPE 295W - Master's Project 3 *unit(s)* (GWAR)

Total Units Required (12 units)

Secure Software Engineering Certificate

With the global threats of cyber-crime, our nation's continued security and economic prosperity depend on the availability of increasing cybersecurity workforce. The Department of Computer Engineering offers a 9-unit Secure Software Engineering (SSE) Certificate program to students who seek career opportunities in cybersecurity and information assurance. The courses in the certificate program cover critical aspects in security domain, including network security, software security, and cyber risk management.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Core

- CMPE 209 - Network Security and Applications 3 *unit(s)*
- CMPE 272 - Enterprise Software Platforms 3 *unit(s)*
- CMPE 279 - Software Security Technologies 3 *unit(s)*

Total Units Required (9 units)

Secure Test Engineering Certificate

With the global threats of cyber-crime, our nation's continued security and economic prosperity depend on the availability of increasing cybersecurity workforce. The Department of Computer Engineering offers a 9-unit Secure Test Engineering (STE) Certificate program to students who seek career opportunities in cybersecurity and information assurance. The courses in the program cover the fundamentals in the design of secure software systems, including software systems engineering, quality assurance, and enterprise platforms.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the

Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Core

- BUS 248 - Cyber Risk Management 3 *unit(s)*
- CMPE 202 - Software Systems Engineering 3 *unit(s)*
- CMPE 287 - Software Quality Assurance and Testing 3 *unit(s)*

Total Units Required (9 units)

Six Sigma Black Belt Certificate

The revolutions in lean manufacturing and quality have swept the world and broadened into the disciplines of lean enterprise and six sigma. Six Sigma's emphasis is on improving existing capabilities. Six Sigma is a set of structured methodologies, problem-solving tools, and advanced statistical methods for analyzing and improving processes, product designs, and services on a broad range of metrics, especially cost, quality, time, and variability. It moves beyond treating symptoms and short-term problems to the elimination of root causes, thereby emphasizing lasting improvement.

This certificate, offered by the Department of Industrial and Systems Engineering, is available to ISE graduate students and local professionals.

Major-Specific Graduation Requirements

All courses in the Certificate must be successfully completed with a grade of "B or better", and students must pass an exit exam.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (12 units)

- ISE 202 - Design and Analysis of Engineering Experiments 3 *unit(s)*
- ISE 235 - Quality Assurance and Reliability 3 *unit(s)*
- ISE 250 - Leading the Six Sigma Improvement Project 3 *unit(s)*
- ISE 251 - Managing the Lean Enterprise Improvement Program 3 *unit(s)* (GWAR)

Total Units Required (12 units)

Spartan Accelerated Graduate Education (SAGE) Scholars

Spartan Accelerated Graduate Education (SAGE) Programs programs are combined bachelor's and master's programs at SJSU (per University Policy F19-1). Sometimes they may also satisfy the requirements for a credential. Students in these programs pursue a bachelor's and master's degree simultaneously. These program allow students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

Aerospace Engineering BS + MS

- Admissions Requirements
- Graduate Standing Requirements
- Program Requirements (144 units)
- Advising Roadmap

The Aerospace Engineering Spartan Accelerated Graduate Education (SAGE) Programs is a combined bachelor's and master's program per University Policy F19-1. Students in this program will simultaneously pursue an Aerospace Engineering, BS (BSAE) and an Aerospace Engineering, MS (MSAE) degree. The program will allow students to earn graduate credit while in their senior year, reducing the number of semesters required for the completion of the MSAE degree.

Total SAGE Program Units (BS + MS) 144

For more information, contact the **SAGE Scholars Aerospace Program Coordinator**: Nikos Mourtos

Admissions Requirements

Students must adhere to the following admissions requirements:

1. Successfully completed all the courses required in the first 3 years of the BSAE degree (95 units) and not more than 120 undergraduate degree applicable units at the time of admission into the Aerospace Engineering SAGE program;
2. Completed the undergraduate Graduation Writing Assessment Requirement (ENGR 100W) prior to admission into the Aerospace Engineering SAGE program;

3. Complete all BSAE junior-level courses (AE 105, AE 112, AE 114, AE 138, AE 140, AE 157, AE 160, AE 162, AE 165) with a GPA of 3.0 or higher; and,
4. Have a minimum 2.5 cumulative GPA at the time of admission into the Aerospace Engineering SAGE program.

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the Aerospace Engineering SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the Aerospace Engineering SAGE program as these students will not gain the accelerated graduate-level benefit offered through the Aerospace Engineering SAGE blended program option.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BSAE degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- Maintain a GPA of 3.0 or higher and in Major Preparation and Major Required listed courses, no individual grade below a C.
- The proposed graduate program must be approved by the Aerospace Engineering graduate coordinator before the student may be considered a candidate for the MS degree.
- Requirements are waived or satisfied with required courses in the major: GE Areas A3, B, C2, and E, SJSU Studies (R, S and V) and Physical Education. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Program Requirements (144 units)

Aerospace Engineering, BS (117 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

University Requirements (21 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Lower and Upper Division General Education, students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, C1, C1/C2 two D/American Institutions (US123), and F 21 unit(s)

Major Preparation (36 units)

To qualify for a baccalaureate degree in Aerospace Engineering, a student must receive a grade of "C" or better in all courses in preparation for the major.

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
- AE 105 - Mathematical Methods for Aerospace Engineers 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)

Major Requirements (60 units)

Core Courses (13 units)

- AE 20 - Computer-Aided Design for Aerospace Engineers 2 *unit(s)*
- AE 30 - Computer Programming for Aerospace Engineers 2 *unit(s)*
- EE 98 - Introduction to Circuit Analysis 3 *unit(s)*
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)

Required Courses (39 units)

SAGE students must complete AE112, AE114, AE138, AE140, AE157, AE160, AE162, AE165 with a grade of "B-" or better in each course.

- AE 112 - Aerospace Structures and Materials I 4 *unit(s)*
- AE 114 - Aerospace Structures and Materials II 3 *unit(s)*
- AE 138 - Vector-Based Dynamics for Aerospace Applications 3 *unit(s)*
- AE 140 - Rigid Body Dynamics 3 *unit(s)*
- AE 157 - Aerospace Automatic Control Systems Design 3 *unit(s)*
- AE 160 - Aerodynamics I 3 *unit(s)*
- AE 162 - Aerodynamics II 3 *unit(s)*
- AE 164 - Aerothermodynamics 5 *unit(s)*
- AE 165 - Aerospace Flight Mechanics 3 *unit(s)*
- AE 167 - Aerospace Propulsion 3 *unit(s)* OR AE 267 - Space Propulsion Systems 3 *units*
- AE 168 - Aerospace Vehicle Dynamics and Control 3 *unit(s)*
- **Complete one course:**
- AE 119 - Finite Element Analysis for Aerospace Applications 3 *unit(s)*
- AE 149 - Advanced Dynamics and Simulation 3 *unit(s)*
- AE 169 - Computational Fluid Dynamics 3 *unit(s)*

Capstone (8 units)

Complete one of the following options:

Option 1: Aircraft Design

- AE 171A - Aircraft Design I 3 *unit(s)* (S)
- AE 171B - Aircraft Design II 3 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)

Option 2: Spacecraft Design

- AE 172A - Spacecraft Design I 3 *unit(s)* (S)
- AE 172B - Spacecraft Design II 3 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)

Aerospace Engineering MS (27 units)

Core Courses (15 units)

- AE 200 - Engineering Analysis of Aerospace Systems 3 *unit(s)*

Dynamics and Control (3 units)

Complete one course:

- AE 242 - Orbital Mechanics and Mission Design 3 *unit(s)*
- AE 243 - Advanced Astrodynamics 3 *unit(s)*
- AE 245 - Spacecraft Dynamics and Control 3 *unit(s)*
- AE 246 - Advanced Aircraft Stability and Control 3 *unit(s)*
- AE 247 - Trajectory Optimization in Aerospace Applications 3 *unit(s)*

Aerospace Structures and Materials (3 units)

Complete one course:

- AE 250 - Advanced Structures and Materials 3 *unit(s)*
- AE 251 - Structural Vibrations for Aerospace Applications 3 *unit(s)*

Fluid Dynamics (3 units)

Complete one course:

- AE 262 - Advanced Aerodynamics 3 *unit(s)*
- AE 264 - Gas Dynamics 3 *unit(s)*
- AE 265 - Boundary Layers 3 *unit(s)*
- AE 266 - Hypersonics 3 *unit(s)*
- AE 269 - Advanced Computational Fluid Dynamics 3 *unit(s)*

Area of Specialization/Approved Electives (9 units)

Students may specialize in one of the two areas listed below. Students electing not to complete an area of specialization must complete one GVAR Course (AE 210, AE 271 or AE 273) and select two additional (100-level or 200-level) elective courses in consultation with the AE Graduate Coordinator.

Aircraft Design (9 units)

Students must select three courses from the following list, including at least one of the GVAR courses (AE 271 or AE 273):

- AE 246 - Advanced Aircraft Stability and Control 3 *unit(s)*
- AE 247 - Trajectory Optimization in Aerospace Applications 3 *unit(s)*
- AE 250 - Advanced Structures and Materials 3 *unit(s)*
- AE 251 - Structural Vibrations for Aerospace Applications 3 *unit(s)*
- AE 262 - Advanced Aerodynamics 3 *unit(s)*
- AE 264 - Gas Dynamics 3 *unit(s)*
- AE 265 - Boundary Layers 3 *unit(s)*
- AE 266 - Hypersonics 3 *unit(s)*
- AE 269 - Advanced Computational Fluid Dynamics 3 *unit(s)*
- AE 271 - Advanced Aircraft Design 3 *unit(s)* (GVAR)
- AE 273 - Aircraft Subsystems 3 *unit(s)* (GVAR)

Space Transportation and Exploration (9 units)

Students must select three courses from the following list, including the GVAR course (AE 210):

- AE 210 - Advanced Space Systems Engineering 3 *unit(s)* (GVAR)
- AE 242 - Orbital Mechanics and Mission Design 3 *unit(s)*
- AE 243 - Advanced Astrodynamics 3 *unit(s)*
- AE 245 - Spacecraft Dynamics and Control 3 *unit(s)*
- AE 247 - Trajectory Optimization in Aerospace Applications 3 *unit(s)*
- AE 250 - Advanced Structures and Materials 3 *unit(s)*
- AE 251 - Structural Vibrations for Aerospace Applications 3 *unit(s)*
- AE 264 - Gas Dynamics 3 *unit(s)*
- AE 265 - Boundary Layers 3 *unit(s)*
- AE 266 - Hypersonics 3 *unit(s)*
- AE 269 - Advanced Computational Fluid Dynamics 3 *unit(s)*

Culminating Experience (6 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

Students take AE 299 twice.

- AE 299 - Aerospace Engineering Masters Thesis 3 *unit(s)*

Plan B (Project)

- AE 295A - Aerospace Engineering Masters Project I 3 *unit(s)*
- AE 295B - Aerospace Engineering Masters Project II 3 *unit(s)*

Total Units Required (144 units)

Note: The standalone Aerospace Engineering, BS program requires 3 units of approved Technical Electives. Students satisfy this requirement in the SAGE Scholars Program by completing 3 units required within the Area of Specialization/Approved Electives in the Aerospace Engineering, MS degree. In addition, the standalone AE BS program requires AE 167 (3 units), and the standalone AE MS program requires AE 267 (3 units). SAGE students complete either AE 167 or AE 267, as either three-unit course will satisfy both BS and MS requirements for aerospace propulsion. These 6 units (3 units in the MS Area of Specialization/Approved Electives and AE 167 or 267) are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Students interested in aerospace propulsion may still take both AE 167 and AE 267 and use one of them to satisfy the propulsion requirement and the other as one of their electives.

Biomedical Engineering BS + MS

- Admissions Requirements
- Graduate Standing Requirements
- Program Requirements (141 units)
- Advising Roadmap

The Biomedical Engineering Spartan Accelerated Graduate Education (SAGE) Scholars Program provides students the opportunity to earn their Biomedical Engineering, BS and Biomedical Engineering, MS degrees simultaneously, completing both degrees in five years, rather than the usual six years when completing them individually. The SAGE Scholars Program Coordinator works closely with the students to ensure a seamless transition from undergraduate to graduate status, without students having to file a formal application for admission to the graduate program. Students have the possibility to combine their senior project and MS project/thesis research requirements, enabling them to undertake more in-depth, publishable quality research which in turn better prepares them for PhD programs as well as professional careers. The Biomedical Engineering SAGE Scholars Program offers students intellectual stimulation and growth and the opportunity to strengthen their research competencies by working closely with their research mentors for a longer period of time.

Students interested in pursuing a Chemistry Minor concurrently should contact their advisor.

Total SAGE Program Units (BS + MS) 141

For more information, contact the **BME SAGE Scholars Program Coordinator** Alessandro Bellofiore.

Admissions Requirements

All SJSU Biomedical Engineering, BS undergraduates are eligible to apply for, and be admitted to, the Biomedical Engineering SAGE Scholars program if they fulfill the following requirements:

1. Completed a minimum of 75 units towards the Biomedical Engineering, BS degree;
2. Have a cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units;
3. Have completed all lower-division general education courses and American Institutions courses; and,

4. Must not be declared in another major.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BS degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study;
- Maintain GPA of 3.0 or higher with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters; and,
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MS degree.
- Students are converted to graduate status when they have completed 123 SAGE program-applicable units. The following University Requirements are waived or satisfied with required courses in the major: GE Areas A2, A3, B, C2, and E, SJSU Studies (R, S and V) and Physical Education. Alternate courses that may satisfy these requirements are not counted in the calculation of the 123 SAGE program-applicable units.

Program Requirements (141 units)

Biomedical Engineering, BS (123 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (18 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, C1, C1/C2, two D/American Institutions (US123) and F 18 *unit(s)*

Major Preparation (45 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 8 - Organic Chemistry 3 *unit(s)*
- CHEM 9 - Organic Chemistry Lab 1 *unit(s)*
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 *unit(s)* (B4) (or MATH 30X)
- MATH 31 - Calculus II 4 *unit(s)* (B4) (or MATH 31X)

- MATH 32 - Calculus III 3 *unit(s)* (B4) (or MATH 32H or MATH 32X)
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)* OR MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Major Requirements (60 units)

Core Courses (11 units)

- BME 25 - Introduction to Biomedical Engineering Design 2 *unit(s)*
- BME 65 - Biomedical Applications of Statics 3 *unit(s)* (CE 95 or CE 99 also accepted)
- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R) A grade of C or better (C- not accepted) is required to meet graduation requirement.

Biomedical Engineering Required Courses (43 units)

- BME 68 - Biomedical Applications of Metals and Ceramics 3 *unit(s)* (MATE 25 also accepted)
- BME 115 - Foundations of Biomedical Engineering 4 *unit(s)*
- BME 116 - Biosensors and Bioinstrumentation 3 *unit(s)* (EE 98 also accepted)
- BME 133 - Programming Applications in Biomedical Engineering 1 *unit(s)*
- BME 135 - Biomedical Engineering Design Methods 2 *unit(s)*
- BME 147 - Quantitative and Statistical Methods for Biomedical Engineers 3 *unit(s)*
- BME 165 - Applied Engineering Biomechanics 3 *unit(s)*
- BME 168 - Medical and Biological Polymers 3 *unit(s)*
- BME 177 - Physiology for Engineers 3 *unit(s)*
- BME 198A - Senior Design Project I 2 *unit(s)* (S)
- BME 198B - Senior Design Project II 2 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)
- BME 210 - Mathematical Methods in Biomedical Engineering 3 *unit(s)*
- BME 217 - Experimental and Computational Biofluid Mechanics 3 *unit(s)*
OR BME 254 - Microscale Biomedical Systems: Physics and Applications 3 *unit(s)*
- BME 272 - Biomedical Device Design and Principles 3 *unit(s)*
- BME 274 - Regulatory, Clinical and Manufacturing Aspects of Medical Devices 3 *unit(s)* (GWAR)

Technical Elective (6 units)

- Electives must be selected from the approved departmental list in consultation with the student's academic advisor.

Biomedical Engineering, MS (30 units)

Core Courses (9 units)

- BME 207 - Experimental Methods in BME 3 *unit(s)* (GWAR)

- BME 276 - Project Management in Biomedical Technologies 3 *unit(s)*
- BME 291 - MS Thesis/Project Preparation Seminar 3 *unit(s)*

Biomedical Engineering Electives (3-6 units)

- Additional electives must be selected from the approved departmental list in consultation with the student's academic advisor.

Culminating Experience (3-6 units)

Students must complete a written thesis or project report and an oral defense of their thesis or project. Ideally, the culminating experience builds on the foundations laid in the student's senior design project (BME 198A and BME 198B). The candidate may choose either the Plan A (Thesis) or Plan B (Project) option. For either option, the student is required to develop a project proposal in BME 291. This must be approved by the student's project advisor and the reading committee at the culmination of BME 291. Once the proposal is approved, the student is required to:

1. implement the approved research plan using appropriate methods for the investigation,
2. use appropriate statistical techniques for analysis of the data and drawing conclusions,
3. discuss the results in light of findings reported by other investigators,
4. write a professional report of appropriate length, and
5. present it and defend the project to the reading committee.

Culminating Experience Options

- **Plan A (Thesis) (6 units)**

The student who opts to complete a master's thesis is responsible for securing the commitment of a full-time tenured or tenure-track BME faculty member who agrees to serve as the thesis committee chair. The student must also secure the commitments of two additional committee members, one of whom must be a full-time tenured or tenure-track faculty member at SJSU, to serve on the student's thesis committee. The student must write a thesis proposal and have it approved by the thesis committee and pass BME 291 - MS Thesis/Project Preparation Seminar (3 units) and BME 298 - MS Project (3 units) before enrolling in BME 299 - MS Thesis (3 units). The thesis must also meet all university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

- **Plan B (Project) (3 units)**

Students opting to complete a master's project must pass BME 291 - MS Thesis/Project Preparation Seminar (3 units) before enrolling in BME 298 - MS Project (3 units).

The project proposal is prepared in BME 291 and must be approved by the student's reading committee at the culmination of that course.

Chemical Engineering BS + MS

- Admissions Requirements
- Graduate Standing Requirements
- Program Requirements (144 units)
- Advising Roadmap

The Chemical Engineering Spartan Accelerated Graduate Education (SAGE) Scholars Program enables qualified students in the Chemical Engineering, BS program to simultaneously complete the requirements for both the

Chemical Engineering, BS and Chemical Engineering, MS degrees. Students will be able to complete BS and MS degrees in Chemical Engineering within 5 years. The Chemical Engineering SAGE Scholars program will allow students to be hired in better positions in leading Silicon Valley companies and to get into Ph.D. programs within 5 years of starting their Chemical Engineering, BS degree.

Total SAGE Program Units (BS + MS) 144

For more information, contact the **SAGE Scholars Program Coordinator** Liat Rosenfield.

Admissions Requirements

All SJSU Chemical Engineering, BS undergraduates are eligible to apply for, and be admitted to, the Chemical Engineering SAGE Scholars program if they fulfill the following requirements:

1. Successfully completed a minimum of 75 Chemical Engineering BS applicable units and not more than 123 undergraduate degree applicable units at the time of admission in the program;
2. Completed CHE 110B, CHE 115, CHE 190 and ENGR 100W with grades "B-" or better;
3. Minimum 3.0 cumulative GPA at time of admission; and,
4. Have completed all *lower-division* work (including lower-division general education courses and American Institutions courses).

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BS degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study;
- Maintain GPA of 3.0 or higher with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters; and,
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MS degree.
- Students are converted to graduate status when they have completed 123 SAGE program-applicable units. The following University Requirements are waived or satisfied with required courses in the major: GE Areas A3, B, C2, and E, SJSU Studies Area R and Physical Education. Alternate courses that may satisfy these requirements are not counted in the calculation of the 123 SAGE program-applicable units.

Program Requirements (144 units)

Chemical Engineering, BS (123 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

University Requirements (27 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, C1, C1/C2 two D/American Institutions (US123), F, S, and V 27 unit(s)

Major Preparation (31 units)

- CHEM 1A - General Chemistry 5 unit(s) (B1+B3)
- CHEM 1B - General Chemistry 5 unit(s) (B1+B3)
- ENGL 1B - Argument and Analysis 3 unit(s) (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 unit(s) (B4) (or MATH 30X)
- MATH 31 - Calculus II 4 unit(s) (B4) (or MATH 31X)
- MATH 32 - Calculus III 3 unit(s) (B4) (or MATH 32H or MATH 32X)
- PHYS 50 - General Physics I: Mechanics 4 unit(s) (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 unit(s) (B1+B3)

Major Requirements (65 units)

Core Courses (11 units)

- CE 99 - Introductory Statics 2 unit(s) (CE 95 also accepted.)
- ENGR 10 - Introduction to Engineering 3 unit(s) (E) (CS 46A or equivalent also accepted, but additional GE Area E units will be required)
- ENGR 100W - Engineering Reports 3 unit(s) (WID+R) A grade of C or better (C- not accepted) is required to meet graduation requirement.
- MATE 25 - Introduction to Materials 3 unit(s)

Major Courses (45 units)

- CHE 110A - Mathematical Methods in Chemical Engineering 2 unit(s)
- CHE 110B - Computational Methods in Chemical Engineering 2 unit(s)
- CHE 115 - Industrial Chemical Calculations 3 unit(s)
- CHE 151 - Process Engineering Thermodynamics 4 unit(s)
- CHE 158 - Kinetics and Reactor Design 3 unit(s)
- CHE 160A - Unit Operations I 4 unit(s)
- CHE 160B - Unit Operations II 4 unit(s)
- CHE 161L - Undergraduate Chemical Engineering Laboratory 2 unit(s)
- CHE 162 - Engineering Statistics and Analysis 2 unit(s)
- CHE 163L - Undergraduate Chemical Engineering Laboratory II 2 unit(s)
- CHE 165A - Plant Design I 2 unit(s)
- CHE 165B - Plant Design II 2 unit(s)
- CHE 185 - Chemical Process Dynamics and Control 2 unit(s)
- CHE 190 - Introduction to Transport Phenomena 3 unit(s)

- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*

Technical Electives (9 units)

ABET required upper division chemistry (3 units)

- CHEM 130A - Biochemistry 4 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*
- CHEM 161A - Physical Chemistry 3 *unit(s)*

CHE Technical Electives (6 units)

- Technical electives can be chosen from designated courses for breadth or focus in one of the four areas of Biochemical Engineering, Environmental Engineering, Semiconductor and Materials Processing, and Alternative Energy and Sustainability with advisor approval.
- Only students who are doing research on campus may be eligible for CHE 282. CHE 282 may be taken 2 times for a maximum of 6 units of technical elective credit. Only one section of CHE 280/CHE 280I/CHE 282 can be taken per semester. *At least one technical elective needs to be an approved 200-level course.*

Chemical Engineering, MS (21 units)

Core Courses (12 units)

- CHE 200 - Research Methods 3 *unit(s)* (GWAR)
- CHE 211 - Advanced Chemical Engineering Thermodynamics 3 *unit(s)*
- CHE 218 - Reaction Kinetics 3 *unit(s)* (GWAR)
- CHE 219 - Transport Processes 3 *unit(s)*

Approved Electives (3 units)

- Elective selected in consultation with a SAGE advisor. 3 *unit(s)*

Culminating Experience (6 unit)

- CHE 281 - MS Thesis/Project Preparation Seminar 3 *unit(s)*
- CHE 280 - Graduate Research OR CHE 280I - Graduate Research Internship 2 *unit(s)*

Complete one course below for one unit.

- **Thesis Requirements:** Students opting to complete a master's thesis are responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the thesis committee chair. The student must also secure the commitments of two additional committee members, one of whom must be a full or part-time SJSU faculty member, to serve as the student's thesis committee. If the student is completing their thesis research off-site, then one person of their thesis committee must be at least a supervisor-level employee from that off-site facility. The student must write a thesis proposal and have it approved by the thesis committee in order to pass CHE 281. CHE 299 is taken in the semester the student expects to complete their final oral and written defense which will serve as their culminating experience. The MS candidate must successfully pass an oral defense and complete an approved thesis report in order to receive credit for CHE 299. Students must be enrolled in courses every

semester with the exception of an approved leave of absence for one semester. Students who have finished all their 21 units with the exception of an RP grade in CHE 299 are eligible for enrollment in CHE 1290R for a reduced tuition fee. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

- **Project Requirements:** Students opting to complete a graduate project are responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the project committee chair. The student must also secure the commitments of an additional committee member to serve as the student's project committee. If the student is completing their thesis project research off-site, then one person of their project committee must be at least a supervisor-level employee from that off-site facility. The student must write a project proposal and have it approved by the project committee in order to pass CHE 281. CHE 298 is taken in the semester the student expects to complete their final oral defense and written project report, which will serve as their culminating experience. The MS candidate must successfully pass an oral and defense and complete an approved written project report in order to receive credit for CHE 298. Students must be enrolled in courses every semester with the exception of an approved leave of absence for one semester. Students who have finished all their 21 units with the exception of an RP grade in CHE 298 are eligible for enrollment in CHE 1290R for a reduced tuition fee.
- CHE 298 - MS Research/Project 1-2 unit(s)
- CHE 298I - MS Research/Project Internship 1-3 unit(s)
- CHE 299 - Master's Thesis 1-3 unit(s)
- CHE 299I - Master's Thesis Internship 1-3 unit(s)

Total Units Required (144 units)

The standalone Chemical Engineering, BS program requires the completion of 9 units of approved chemical engineering technical electives including 3 units of an ABET required chemistry elective. These nine units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Only students who are doing research on campus may be eligible for CHE 282. CHE 282 may be taken 2 times for a maximum of 6 units of technical elective credit. Only one section of CHE 280/CHE 280I/CHE 282 can be taken per semester.

Electrical Engineering BS + MS

The Electrical Engineering Spartan Accelerated Graduate Education (SAGE) Scholars Program enables qualified students in the Electrical Engineering, BS program to complete simultaneously the requirements for both the Electrical Engineering, BS and Electrical Engineering, MS degrees. Students progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in one fewer semester than would occur if completing them separately. This program thus provides a substantial cost savings.

Total SAGE Program Units (BS + MS) 144

For more information, contact the **SAGE Scholars Program Coordinator** Thuy Le.

Admissions Requirements

All SJSU Electrical Engineering, BS undergraduates are eligible to apply for, and be admitted to, the Electrical Engineering SAGE Scholars program if they fulfill the following requirements:

1. Successfully completed a minimum of 75 Electrical Engineering BS applicable units and not more than 123 undergraduate degree applicable units at the time of admission in the program;
2. Completed EE 110, EE 112, and EE 118 with grades of "B" or better;
3. Minimum 3.0 cumulative GPA at time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher.
4. Have completed all *lower-division* work (including lower-division general education courses and American Institutions courses).

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BS degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study;
- Maintain GPA of 3.0 or higher.
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MS degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are waived or satisfied with required courses in the major: GE Areas A3, B, C2, and E, SJSU Studies (R, S and V) and Physical Education. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Program Requirements (144 units)

Electrical Engineering, BS (114 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

University Requirements (21 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the American Institutions (US123), students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, C1, C1/C2, D/American Institutions (US123), and F 21 *unit(s)*

Major Preparation (33 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)

- MATH 30 - Calculus I 3 *unit(s)* B4 (or MATH 30X)
- MATH 31 - Calculus II 4 *unit(s)* B4 (or MATH 31X)
- MATH 32 - Calculus III 3 *unit(s)* B4 (or MATH 32H or MATH 32X)
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)

Core Courses (13 units)

- EE 30 - Introduction to Programming Micro-Controllers for Electrical Engineering 3 *unit(s)* (CMPE 30 taken at SJSU is also accepted, but courses equivalent to CMPE 30 taken at other colleges/universities are not accepted.)
- EE 97 - Introductory Electrical Engineering Laboratory 1 *unit(s)*
- EE 98 - Introduction to Circuit Analysis 3 *unit(s)*
- ENGR 10 - Introduction to Engineering 3 *unit(s)*
- ENGR 100W - Engineering Reports 3 *unit(s)*

Major Courses (44 units)

The 1-unit ENGR 195A and ENGR 195B courses must be concurrently enrolled with the required EE 198A and EE 198B courses, respectively.

- EE 102 - Probability and Statistics in Electrical 3 *unit(s)*
- EE 110 - Circuits and Systems 3 *unit(s)*
- EE 110L - Continuous and Discrete Time Systems Lab 1 *unit(s)*
- EE 112 - Introduction to Signal Processing 3 *unit(s)*
- EE 118 - Digital Logic Circuit Design 4 *unit(s)*
- EE 120 - Microprocessor Based System Design 4 *unit(s)*
- EE 122 - Electronic Design I 4 *unit(s)*
- EE 124 - Electronic Design II 4 *unit(s)*
- EE 128 - Physical Electronics 3 *unit(s)*
- EE 132 - Theory of Automatic Controls 3 *unit(s)* **OR** EE 160 - Principles of Communication Systems 3 *unit(s)*
- EE 140 - Principles of Electromagnetic Fields 3 *unit(s)*
- EE 198A - Senior Design Project I 1 *unit(s)* (S)
- EE 198B - Senior Design Project II 3 *unit(s)* (V)
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)
- MATE 153 - Electronic, Optical, and Magnetic Properties of Materials 3 *unit(s)*

Upper Division EE Electives (3 units)

Upper Division Elective must be approved by the SAGE advisor.

Electrical Engineering, MS (30 units)

- EE 295 - Technical Writing - Engineering Ethics 3 *unit(s)* (GWAR) (Students with GWAR waivers take an additional 3 units of electives)
- Complete one course (3 units): EE 210 - Linear System Theory 3 *unit(s)* **OR** EE 221 - Semiconductor Devices I 3 *unit(s)* **OR** EE 250 - Probabilities, Random Variables and Stochastic Processes **OR** EE 275 - Advanced Computer Architectures 3 *unit(s)*

Area of Specialization (9 units)

Students desiring to pursue an area of specialization not listed should consult graduate advisor.

- Device Physics, Micro and Nano Electronics
- Analog Electronics, Integrated Circuits
- Power Electronics, Energy Systems
- Communications, Signal Processing, Remote Sensing
- Control, Robotics, Autonomous Systems
- Digital Systems, Microprocessors and Computers, Embedded Systems
- Network, Network Security, Mobile Network, IoT
- Quantum Computer, Quantum Information
- Artificial Intelligence, Machine Learning, Deep Learning

Culminating Experience (6 units)

- **Plan A (Thesis)**
Students choosing this option must complete the EE 299A - MSEE Thesis Proposal or EE 297A - MSEE Project Proposal and EE 299B - MSEE Thesis. The student is responsible for securing the commitment of three university faculty members, two of whom must be full-time EE faculty members, to serve as the student's thesis committee, with one full-time EE faculty member agreeing to serve as thesis committee chair. The student must write a thesis or project proposal and have it approved by the thesis committee chair or project advisor and pass the MSEE Thesis or Project Proposal course (EE 299A or EE 297A) before enrolling in EE 299B. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. The candidate for the MSEE degree must successfully pass a final oral defense of the thesis.
- **Plan B (Project)**
The student must complete the EE 297A - MSEE Project Proposal or EE 299A - MSEE Thesis Proposal and EE 297B - MSEE Project. The student is responsible for securing the commitment of a full-time EE faculty member to serve as MSEE Project Advisor. The student must write a project or thesis proposal and have it approved by the project advisor or thesis committee chair and pass the MSEE Project or Thesis Proposal course (EE 297A or EE 299A) before enrolling in EE 297B. The candidate for the MSEE degree must successfully pass a final defense of the project.

Advisor Approved Electives (9 units)

Total Units Required (144 units)

A coherent plan of study must be approved on the prescribed form by the SAGE advisor. The traditional MS - Electrical Engineering degree requires 33 units. Students in the SAGE program are only required to satisfy 30 units for the master's portion of the degree. The standalone Electrical Engineering, BS requires the completion of 12 units of Technical Electives. Students satisfy 9 units of this requirement in this SAGE Scholars Program by completing 9 units within the elective requirement in the MS Electrical Engineering program. These 9 credits are considered to

count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Industrial and Systems Engineering BS + Industrial and Systems Engineering, Concentration in Operational Analytics, MS

The Industrial and Systems Engineering (ISE) Operational Analytics Spartan Accelerated Graduate Education (SAGE) Program enables qualified students in the Industrial and Systems Engineering, BS program to simultaneously complete the requirements for both the baccalaureate and the master's Industrial and Systems Engineering, Concentration in Operational Analytics degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the students.

The ISE Operational Analytics SAGE program will allow students to be hired in better positions in the growing and high demand analytics job market in leading Silicon Valley companies and to get into Ph.D. programs within 5 years of starting their Industrial and Systems Engineering, BS degree.

Total SAGE Program Units (BS + MS) 138

For more information, contact the **SAGE Scholars Program Coordinator**: Hongrui Liu.

Admissions Requirements

The ISE Operational Analytics SAGE program allows undergraduates to begin their graduate studies while completing undergraduate requirements. SAGE programs provide students with an integrative and cohesive educational experience that combines subject matter, pedagogy and research. All SJSU SAGE programs are guided by university policy F-19.

Eligibility Requirements:

Applicants need to fulfill the following requirements:

1. Must have declared the Industrial and Systems Engineering, BS major
2. Have completed a minimum of 75 units towards the Industrial and Systems Engineering, BS degree (but no more than 120 units)
3. Completed ENGR 100W with a grade of "B" or better
4. Have a cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units
5. Completed all lower division GE requirements
6. Completed all lower division courses (1-99)
7. Not have enrolled in senior project

Most native and transfer students will become eligible to apply for the SAGE program in the Spring semester of Year 3 and enter the pathway during the Summer of Year 3 and Fall of Year 4. Applications will be processed by the Industrial and Systems Engineering Department without an application fee. Students will not need to apply formally for graduate admission if accepted into this program.

Application Requirements and Processes:

1. Students meet with their undergraduate academic advisor. The advisor must complete and sign the SAGE Application form (checking Box A) and the Course of Study Plan. The form and plan should be routed to the registrar's office and a copy should be included in the student application to the department;
2. Students must fill out and include an application form;

3. Transcripts for any coursework completed at other colleges or universities not showing in the students' MySJSU account must be included;
4. Students must include a one-page resume that details their college-level academic, employment, and volunteer experiences. In describing a position held (employment or volunteer service), highlight the duties performed and any relevant awards or accomplishments;
5. Students must include a 1 page personal statement that explains how they arrived at their decision to continue with the ISE Operational Analytics MS degree.

Applications will be processed by the Department of Industrial and Systems Engineering (NOT through CalState Apply). They are processed without an application fee. All application documents should be collated into a single pdf and sent to the department via the program coordinator.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status.
- Advisors should note that ISE 245 is elective in standalone BS ISE program, however, SAGE students MUST take it to double count for ISE 135.
- Maintain a GPA of 3.0 or higher.
- Once the BS degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MS degree.

Dismissal from Program

- Dismissal by the ISE Department if students do not meet continuation requirements (GPA of 3.0 or higher).
- An exit ramp from the SAGE program to the traditional ISE BS program will be accessible for all students who have not yet converted to graduate status. Exiting can be initiated by the student for any reason. If the student opts out of, or fails to complete the Master's degree portion of the program, the following will apply:
 - Credit earned for graduate coursework and used to complete the bachelor's degree may not be used to satisfy unit requirements of the Master's degree.

Converting to Graduate Status and Advancing to Candidacy

Once the student has completed or will complete 120 degree applicable units within the semester of filing for transition into the graduate program, the advisor must fill out a second SAGE Program Course of Study Plan (checking Box B) to transition into the graduate program and advance to candidacy. This form should be sent to both the Registrar's Office to prepare for the Bachelor's degree graduation evaluation **and** the Graduate Admissions and Program Evaluations Office (GAPE) for processing and placement of the student into the graduate career. The advisor will obtain the graduate program coordinator's signature prior to routing. As this form will also confirm advancement to candidacy, the following eligibility requirements apply for courses counted in the Master's degree **including those courses to be double counted**:

1. GPA of at least 3.00 cumulative in undergraduate career & completed graduate coursework with a 'C' or better;
2. Graduate program designated GWAR course listed on SAGE Program Course of Study Plan;
3. At least 50% of the graduate program must be 200-level courses and at least 60% of the designated graduate courses must be letter graded.

Program Requirements (138 units)

Industrial and Systems Engineering, BS (120 units)

University Requirements (24 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

GE Areas A1, A2, C1, C1/C2, two D/American Institutions (US123), F, S 24 unit(s)

Exceptions for University Graduation Requirements apply to this major.

Major Preparation (29 units)

- CHEM 1A - General Chemistry 5 unit(s) (B1+B3)
- ENGL 1B - Argument and Analysis 3 unit(s)
- MATH 30 - Calculus I 3 unit(s) (B4)
- MATH 31 - Calculus II 4 unit(s) (B4)
- MATH 32 - Calculus III 3 unit(s) (B4)
- MATH 33LA - Differential Equations and Linear Algebra 3 unit(s)
- PHYS 50 - General Physics I: Mechanics 4 unit(s) (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 unit(s) (B1+B3)

Major Courses (67 units)

ISE 130 must be completed with a "C-" or better. ISE 195A and ISE 195B must be completed with a "C" or better. At least one approved technical elective must be an engineering course and all technical electives must be completed with a grade of "C-" or better.

Core Courses (11 units)

- CMPE 30 - Programming Concepts and Methodology 3 unit(s)
- ENGR 10 - Introduction to Engineering 3 unit(s) (E)
- ME 20 - Design and Graphics 2 unit(s)
- MATE 25 - Introduction to Materials 3 unit(s)

Major Courses (50 units)

- CMPE 131 - Software Engineering I 3 unit(s)
- ENGR 100W - Engineering Reports 3 unit(s) (WID+R)
- ISE 102 - Engineering Economic Systems 3 unit(s)
- ISE 105 - Introduction to Systems Engineering 3 unit(s)
- ISE 115 - Lean Integrated Manufacturing 3 unit(s)
- ISE 120 - Work Methods Design and Measurement 3 unit(s)
- ISE 130 - Engineering Probability and Statistics 3 unit(s)
- ISE 131 - Statistical Process Control and Improvement 3 unit(s)
- ISE 140 - Operations Planning and Control 3 unit(s)
- ISE 142 - Service Systems Engineering and Management 3 unit(s)
- ISE 151 - Engineering Management Systems in Global Society 3 unit(s) (V)

- ISE 167 - System Simulation 3 *unit(s)*
- ISE 194 - Analytics Workshop 1 *unit(s)*
- ISE 195A - Senior Industrial Engineering Design I 1 *unit(s)*
- ISE 195B - Senior Industrial Engineering Design II 3 *unit(s)*
- ISE 202 - Design and Analysis of Engineering Experiments 3 *unit(s)*
- ISE 230 - Advanced Operations Research 3 *unit(s)* (GWAR)
- ISE 245 - Advanced Supply Chain Engineering 3 *unit(s)*

Approved Technical Electives (6 units)

Complete two courses; one course must be graduate level approved by the graduate advisor.

Industrial and Systems Engineering, Concentration in Operational Analytics, MS (18 units)

Core Courses (12 units)

- ISE 205 - Data Ethics 3 *unit(s)*
- ISE 233 - Operational Data Analysis for Industrial Systems 3 *unit(s)*
- ISE 240 - Analytics for Systems Engineering 3 *unit(s)*
- ISE 244 - AI Tools and Practice for Systems Engineering 3 *unit(s)*

Approved Elective (3 units)

Complete one course planned in consultation with the graduate advisor.

- ISE 234 - Electricity Markets & Power Systems Analytics 3 *unit(s)*
- ISE 235 - Quality Assurance and Reliability 3 *unit(s)*
- ISE 241 - Advanced Operations Planning and Control 3 *unit(s)*
- ISE 243 - Advanced Supply Chain Analytics 3 *unit(s)*
- ISE 247 - Logistics for Supply Chain 3 *unit(s)*
- ISE 265 - Advanced System Simulation 3 *unit(s)*

Culminating Experience (3 units)

Complete one option (Plan A Thesis or Plan B Project).

Plan A (Thesis)

- ISE 299 - Master's Thesis 1-4 *unit(s)* (3 units required)

Plan B (Project)

- ISE 298 - Special Problems 1-4 *unit(s)* (3 units required)

Total Units Required (138 units)

The standalone Industrial and Systems Engineering, BS program requires ISE 135, ISE 170, and ISE 155. Students satisfy this requirement in this SAGE Scholars Program by completing ISE 202, ISE 230, and ISE 245, respectively. Industrial and Systems Engineering, Operational Analytics Concentration, MS requires 9 units of Approved Electives. Students satisfy 6 units of Approved Electives in this SAGE Scholars Program by completing ISE 245 and a graduate level elective in the BS Industrial and Systems Engineering program. These 12 units are considered to count toward

both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Industrial and Systems Engineering BS + Engineering Management MS

The Industrial and Systems Engineering Spartan Accelerated Graduate Education (SAGE) Programs enables qualified students in the Industrial and Systems Engineering, BS (ISE) program to simultaneously complete the requirements for both the Industrial and Systems Engineering, BS and Engineering Management, MS (EM) degree. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

The ISE EM SAGE Scholars program will allow students to be hired in better positions in leading Silicon Valley companies and to get into Ph.D. programs within 5 years of starting their Industrial and Systems Engineering, BS degree.

Total SAGE Program Units (BS + MS) 138

For more information, contact the **SAGE Scholars Program Coordinator**: Hongrui Liu.

Admissions Requirements

The ISE EM SAGE program allows undergraduates to begin their graduate studies while completing undergraduate requirements. SAGE programs provide students with an integrative and cohesive educational experience that combines subject matter, pedagogy and research. All SJSU SAGE programs are guided by university policy F-19.

Eligibility Requirements:

Applicants need to fulfill the following requirements:

1. Must have declared the Industrial and Systems Engineering, BS major
2. Have completed a minimum of 75 units towards the Industrial and Systems Engineering, BS degree (but no more than 120 units)
3. Completed ISE 130 with a B- or better, must have successfully completed ENGR 100W or are currently enrolled at time of admission
4. Completed all lower division GE requirements
5. Completed all lower division courses (1-99)
6. Not have enrolled in senior project

Most native and transfer students will become eligible to apply for the SAGE program in the Spring semester of Year 3 and enter the pathway during the Summer of Year 3 and Fall of Year 4. Applications will be processed by the Industrial and Systems Engineering Department without an application fee. Students will not need to apply formally for graduate admission if accepted into this program.

Application Requirements and Processes:

1. Students meet with their undergraduate academic advisor. The advisor must complete and sign the SAGE Application form (checking Box A) and the Course of Study Plan. The form and plan should be routed to the registrar's office and a copy should be included in the student application to the department;
2. Students must fill out and include an application form;
3. Transcripts for any coursework completed at other colleges or universities not showing in the students' MySJSU account must be included;

4. Students must include a one-page resume that details their college-level academic, employment, and volunteer experiences. In describing a position held (employment or volunteer service), highlight the duties performed and any relevant awards or accomplishments;
5. Students must include a 1 page personal statement that explains how they arrived at their decision to continue with Industrial and Systems Engineering, MS degree;

Applications will be processed by the Department of Industrial and Systems Engineering (NOT through CalState Apply). They are processed without an application fee. All application documents should be collated into a single pdf and sent to the department via the program coordinator.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status.
- Once the BS degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study;
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MS degree.

Dismissal from Program

- Dismissal by the ISE Department if students do not meet continuation requirements (GPA of 3.0 or higher).
- An exit ramp from the SAGE program to the traditional ISE BS program will be accessible for all students who have not yet converted to graduate status. Exiting can be initiated by the student for any reason. If the student opts out of, or fails to complete the Master's degree portion of the program, the following will apply:
 - Credit earned for graduate coursework and used to complete the bachelor's degree may not be used to satisfy unit requirements of the Master's degree

Converting to Graduate Status and Advancing to Candidacy

1. GPA of at least 3.00 cumulative in undergraduate career & completed graduate coursework with a 'C' or better;
2. Graduate program designated GVAR course listed on SAGE Program Course of Study Plan;
3. At least 50% of the graduate program must be 200-level courses and at least 60% of the designated graduate courses must be letter graded.
4. Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are waived or satisfied with required courses in the major: GE Areas A3, B, C2, and E, SJSU Studies (R and V) and Physical Education. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Program Requirements (138 units)

Industrial and Systems Engineering, BS (120 units)

University Requirements (24 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GVAR), students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

GE Areas A1, A2, C1, C1/C2, two D/American Institutions (US123), F, S 24 unit(s)

Exceptions for University Graduation Requirements apply to this major.

Major Preparation (29 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Major Requirements (67 units)

ISE 130 must be completed with a "C-" or better. ISE 195A and ISE 195B must be completed with a "C" or better. At least one approved technical elective must be an engineering course and all technical electives must be completed with a grade of "C-" or better.

Core Courses (11 units)

- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- ME 20 - Design and Graphics 2 *unit(s)*
- MATE 25 - Introduction to Materials 3 *unit(s)*
- CMPE 30 - Programming Concepts and Methodology 3 *unit(s)*

Major Courses (50 units)

- CMPE 131 - Software Engineering I 3 *unit(s)*
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- ISE 102 - Engineering Economic Systems 3 *unit(s)*
- ISE 105 - Introduction to Systems Engineering 3 *unit(s)*
- ISE 115 - Lean Integrated Manufacturing 3 *unit(s)*
- ISE 120 - Work Methods Design and Measurement 3 *unit(s)*
- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- ISE 131 - Statistical Process Control and Improvement 3 *unit(s)*
- ISE 135 - Design of Experiments 3 *unit(s)*
- ISE 140 - Operations Planning and Control 3 *unit(s)*
- ISE 142 - Service Systems Engineering and Management 3 *unit(s)*
- ISE 151 - Engineering Management Systems in Global Society 3 *unit(s)* (V)
- ISE 167 - System Simulation 3 *unit(s)*
- ISE 194 - Analytics Workshop 1 *unit(s)*
- ISE 195A - Senior Industrial Engineering Design I 1 *unit(s)*
- ISE 195B - Senior Industrial Engineering Design II 3 *unit(s)*
- ISE 230 - Advanced Operations Research 3 *unit(s)*
- ISE 245 - Advanced Supply Chain Engineering 3 *unit(s)*

Approved Technical Electives (6 units)

- ISE 250 - Leading the Six Sigma Improvement Project 3 *unit(s)*
- ISE 251 - Managing the Lean Enterprise Improvement Program 3 *unit(s)* (GWAR)

Engineering Management, MS (18 units)

Core Courses (9 units)

- ISE 200 - Financial Methods for Engineers 3 *unit(s)*
- ISE 222 - Adv Sys Engr 3 *unit(s)*
- ISE 213 - Principles of Engineering Management 3 *unit(s)*

Approved Electives (6 units)

6 units of electives selected in consultation with SAGE advisor. Students take two BUS electives (6 units).

Culminating Experience (3 units)

Complete either Plan A (Thesis) or Plan B (Project):

- Plan A (Thesis)
 - ISE 299 - Master's Thesis 1-4 *unit(s)* (3 units required)
- Plan B (Project)
 - ISE 298 - Special Problems 1-4 *unit(s)* (3 units required)

Total Units Required (138 units)

The standalone Industrial and Systems Engineering, BS requires the completion of ISE 155 and ISE 170. Students satisfy these requirements in this SAGE Scholars Program by completing ISE 245 and ISE 230, respectively. The BS program requires 6 units of Technical Electives. Students satisfy this requirement in this SAGE Scholars Program by completing ISE 250 and ISE 251, Engineering Management, MS Core Courses. These 12 units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Industrial and Systems Engineering BS + MS

The Industrial and Systems Engineering Spartan Accelerated Graduate Education (SAGE) Scholars Program enables qualified students in the Industrial and Systems Engineering, BS (ISE) program to simultaneously complete the requirements for both the Industrial and Systems Engineering, BS and Industrial and Systems Engineering, MS degree. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

The ISE SAGE Scholars program will allow students to be hired in better positions in leading Silicon Valley companies and to get into Ph.D. programs within 5 years of starting their Industrial and Systems Engineering, BS degree.

Total SAGE Program Units (BS + MS) 138

For more information, contact the **SAGE Scholars Program Coordinator: Hongrui Liu.**

Admissions Requirements

The Industrial and Systems Engineering SAGE program allows undergraduates to begin their graduate studies while completing undergraduate requirements. SAGE programs provide students with an integrative and cohesive educational experience that combines subject matter, pedagogy and research. All SJSU SAGE programs are guided by university policy F-19.

Eligibility Requirements:

Applicants need to fulfill the following requirements:

1. Must have declared the Industrial and Systems Engineering, BS major
2. Have completed a minimum of 75 units towards the Industrial and Systems Engineering, BS degree (but no more than 120 units)
3. Completed ENGR 100W with a grade of B or better
4. Have a cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units
5. Completed all lower division GE requirements
6. Completed all lower division courses (1-99)
7. Not have enrolled in senior project

Most native and transfer students will become eligible to apply for the SAGE program in the Spring semester of Year 3 and enter the pathway during the Summer of Year 3 and Fall of Year 4. Applications will be processed by the Industrial and Systems Engineering Department without an application fee. Students will not need to apply formally for graduate admission if accepted into this program.

Application Requirements and Processes:

1. Students meet with their undergraduate academic advisor. The advisor must complete and sign the SAGE Application form (checking Box A) and the Course of Study Plan. The form and plan should be routed to the registrar's office and a copy should be included in the student application to the department;
2. Students must fill out and include an application form;
3. Transcripts for any coursework completed at other colleges or universities not showing in the students' MySJSU account must be included;
4. Students must include a one-page resume that details their college-level academic, employment, and volunteer experiences. In describing a position held (employment or volunteer service), highlight the duties performed and any relevant awards or accomplishments;
5. Students must include a 1 page personal statement that explains how they arrived at their decision to continue with Industrial and Systems Engineering, MS degree;

Applications will be processed by the Department of Industrial and Systems Engineering (NOT through CalState Apply). They are processed without an application fee. All application documents should be collated into a single pdf and sent to the department via the program coordinator.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status.

- Once the BS degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study;
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MS degree.

Dismissal from Program

- Dismissal by the ISE Department if students do not meet continuation requirements (GPA of 3.0 or higher).
- An exit ramp from the SAGE program to the traditional ISE BS program will be accessible for all students who have not yet converted to graduate status. Exiting can be initiated by the student for any reason. If the student opts out of, or fails to complete the Master's degree portion of the program, the following will apply:
 - Credit earned for graduate coursework and used to complete the bachelor's degree may not be used to satisfy unit requirements of the Master's degree

Converting to Graduate Status and Advancing to Candidacy

1. GPA of at least 3.00 cumulative in undergraduate career & completed graduate coursework with a 'C' or better;
2. Graduate program designated GVAR course listed on SAGE Program Course of Study Plan;
3. At least 50% of the graduate program must be 200-level courses and at least 60% of the designated graduate courses must be letter graded.
4. Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are waived or satisfied with required courses in the major: GE Areas A3, B, C2, and E, SJSU Studies (R and V) and Physical Education. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Program Requirements (138 units)

Industrial and Systems Engineering, BS (120 units)

University Requirements (24 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GVAR), students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

GE Areas A1, A2, C1, C1/C2, two D/American Institutions (US123), F, S 24 unit(s)

Exceptions for University Graduation Requirements apply to this major.

Major Preparation (29 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*

- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Major Requirements (67 units)

ISE 130 must be completed with a "C-" or better. ISE 195A and ISE 195B must be completed with a "C" or better. At least one approved technical elective must be an engineering course and all technical electives must be completed with a grade of "C-" or better.

Core Courses (11 units)

- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- ME 20 - Design and Graphics 2 *unit(s)*
- MATE 25 - Introduction to Materials 3 *unit(s)*
- CMPE 30 - Programming Concepts and Methodology 3 *unit(s)*

Major Courses (56 units)

- CMPE 131 - Software Engineering I 3 *unit(s)*
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- ISE 102 - Engineering Economic Systems 3 *unit(s)*
- ISE 105 - Introduction to Systems Engineering 3 *unit(s)*
- ISE 115 - Lean Integrated Manufacturing 3 *unit(s)*
- ISE 120 - Work Methods Design and Measurement 3 *unit(s)*
- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- ISE 131 - Statistical Process Control and Improvement 3 *unit(s)*
- ISE 135 - Design of Experiments 3 *unit(s)*
- ISE 140 - Operations Planning and Control 3 *unit(s)*
- ISE 142 - Service Systems Engineering and Management 3 *unit(s)*
- ISE 151 - Engineering Management Systems in Global Society 3 *unit(s)* (V)
- ISE 167 - System Simulation 3 *unit(s)*
- ISE 194 - Analytics Workshop 1 *unit(s)*
- ISE 195A - Senior Industrial Engineering Design I 1 *unit(s)*
- ISE 195B - Senior Industrial Engineering Design II 3 *unit(s)*
- ISE 230 - Advanced Operations Research 3 *unit(s)*
- ISE 245 - Advanced Supply Chain Engineering 3 *unit(s)*
- Two graduate level electives approved by the graduate advisor 6 *unit(s)*

Industrial and Systems Engineering, MS (18 units)

There are 4 courses that could be used to satisfy GWAR requirements, at least one course in each of the four Specialty Areas. Complete at least one of the following courses:

- ISE 202 - Design and Analysis of Engineering Experiments 3 *unit(s)* (GWAR)
- ISE 212 - Human Factors Experiments 3 *unit(s)* (GWAR)
- ISE 251 - Managing the Lean Enterprise Improvement Program 3 *unit(s)* (GWAR)
- ISE 270 - Information Engineering 3 *unit(s)* (GWAR)

Core Courses (6 units)

- ISE 235 - Quality Assurance and Reliability 3 *unit(s)*
- ISE 240 - Analytics for Systems Engineering 3 *unit(s)*

Specialty Area (9 units)

Complete three courses in one Specialty Area, including at least one of the following GVAR courses: ISE 202, 212, 251, or 270.

Specialty Area 1: Production and Quality Assurance

- Complete three courses from:
 - ISE 202 - Design and Analysis of Engineering Experiments 3 *unit(s)* (GVAR)
 - ISE 233 - Operational Data Analysis for Industrial Systems 3 *unit(s)*
 - ISE 241 - Advanced Operations Planning and Control 3 *unit(s)*
 - ISE 250 - Leading the Six Sigma Improvement Project 3 *unit(s)*
 - ISE 251 - Managing the Lean Enterprise Improvement Program 3 *unit(s)* (GVAR)
 - ISE 265 - Advanced System Simulation 3 *unit(s)*

Specialty Area 2: Supply Chain and Logistics Engineering

- Required course:
 - ISE 247 - Logistics for Supply Chain 3 *unit(s)*
- Complete two courses from:
 - ISE 223 - Dec Model Sus Dev 3 *unit(s)*
 - ISE 241 - Advanced Operations Planning and Control 3 *unit(s)*
 - ISE 243 - Advanced Supply Chain Analytics 3 *unit(s)*
 - ISE 250 - Leading the Six Sigma Improvement Project 3 *unit(s)*
 - ISE 251 - Managing the Lean Enterprise Improvement Program 3 *unit(s)* (GVAR)
 - ISE 265 - Advanced System Simulation 3 *unit(s)*
 - ISE 270 - Information Engineering 3 *unit(s)*

Specialty Area 3: Healthcare and Service Systems Engineering

- Two required courses:
 - ISE 242 - Advanced Service Systems Engineering and Management 3 *unit(s)*
 - ISE 260 - Healthcare Delivery Systems 3 *unit(s)*
- Complete one course from:
 - ISE 200 - Financial Methods for Engineers 3 *unit(s)*
 - ISE 250 - Leading the Six Sigma Improvement Project 3 *unit(s)*
 - ISE 251 - Managing the Lean Enterprise Improvement Program 3 *unit(s)* (GVAR)
 - ISE 261 - Medical Errors Reduction and Patients Safety Engineering 3 *unit(s)*

Specialty Area 4: Human Factors Engineering

- Required course:
 - ISE 210 - Human Factors/Ergonomics 3 *unit(s)*
- Complete two courses from:
 - ISE 202 - Design and Analysis of Engineering Experiments 3 *unit(s)*
 - ISE 212 - Human Factors Experiments 3 *unit(s)* (GVAR)
 - ISE 215 - Usability Evaluation and Testing 3 *unit(s)*
 - ISE 217 - Human Computer Interaction 3 *unit(s)*
 - ISE 219 - HCI for Cyber Security 3 *unit(s)*

Culminating Experience (3 units)

Complete one option: Plan A (Thesis), Plan B (Project), or Plan B (Comprehensive Exam):

- Plan A (Thesis)
 - ISE 299 - Master's Thesis 1-4 unit(s) (3 units required)
- Plan B (Project)
 - ISE 298 - Special Problems 1-4 unit(s) (3 units required)
- Plan B (Comprehensive Exam)
 - Five-hour exam covering three core courses and two elective courses. Students in this option take a third elective course (a total of 9 units approved electives)

Total Units Required (138 units)

The standalone Industrial and Systems Engineering, BS requires ISE 155 and ISE 170. Students satisfy this requirement in this SAGE Scholars Program by completing ISE 245 and ISE 230, respectively. Industrial and Systems Engineering, MS requires 3 units of Approved Elective and 4 courses in a Specialty Area. Students satisfy the Elective and one of the Specialty Area course requirements in this SAGE Scholars Program by completing two graduate level electives within the BS Industrial and Systems Engineering program. These 12 credits are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Materials Engineering BS + MS

The Materials Engineering Spartan Accelerated Graduate Education (SAGE) Scholars Program provides students the opportunity to earn their Materials Engineering, BS and Materials Engineering, MS degrees simultaneously, completing both degrees in five years, rather than the usual six years when completing them individually. The SAGE Scholars Program Coordinator works closely with the students to ensure a seamless transition from undergraduate to graduate status, without students having to file a formal application for admission to the graduate program. Students have the possibility to combine their senior project and MS project/thesis research requirements, enabling them to undertake more in-depth, publishable quality research which in turn better prepares them for PhD programs as well as professional careers. The Materials Engineering SAGE Scholars Program offers students intellectual stimulation and growth and the opportunity to strengthen their research competencies by working closely with their research mentors for a longer period of time.

Total SAGE Program Units (BS + MS) 141

For more information, contact the **SAGE Scholars Program Coordinator** Ozgur Keles.

Admissions Requirements

All SJSU Materials Engineering, BS undergraduates are eligible to apply for, and be admitted to, the Materials Engineering SAGE Scholars program if they fulfill the following requirements:

1. Completed a minimum of 75 units towards the Materials Engineering BS degree;
2. Completed MATE 115, MATE 141, MATE 151, and ENGR 100W with grades B or better;
3. Have a cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units;
4. Have completed all lower-division work (including lower- division general education courses and American Institutions courses); and,
5. Must not be declared in another major.

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BS degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study;
- Maintain GPA of 3.0 or higher with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters; and,
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MS degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are waived or satisfied with required courses in the major: GE Areas A3, B, C2, and E, SJSU Studies (R, S and V) and Physical Education. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Program Requirements (141 units)

Materials Engineering, BS (117 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

University Requirements (21 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR) students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, C1, C1/C2, two Ds/American Institutions (US123), and F 21 *unit(s)*

Major Preparation (33 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent second semester composition course.)
- MATH 30 - Calculus I 3 *unit(s)* (B4) (or MATH 30X)
- MATH 31 - Calculus II 4 *unit(s)* (B4) (or MATH 31X)
- MATH 32 - Calculus III 3 *unit(s)* (B4) (or MATH 32H or MATH 32X)

- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- CHE 110A - Mathematical Methods in Chemical Engineering 2 *unit(s)*

Major Requirements (63 units)

Core Courses (11 units)

- ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- MATE 25 - Introduction to Materials 3 *unit(s)*
- CE 99 - Introductory Statics 2 *unit(s)* (CE 95 also accepted.)

Major Courses (46 units)

- CHE 110B - Computational Methods in Chemical Engineering 2 *unit(s)*
- CHE 161 - Process Safety and Engineering Ethics 1 *unit(s)*
- CHE 162 - Engineering Statistics and Analysis 2 *unit(s)*
- MATE 115 - Structure/Properties of Solids 3 *unit(s)*
- MATE 141 - Structure and Analysis of Materials 3 *unit(s)*
- MATE 146 - Experimental Methods in Materials Characterization 3 *unit(s)*
- MATE 151 - Solid State Thermodynamics 3 *unit(s)*
- MATE 152 - Solid State Kinetics 3 *unit(s)*
- MATE 153 - Electronic, Optical, and Magnetic Properties of Materials 3 *unit(s)*
- MATE 154 - Metals and Alloys 3 *unit(s)*
- MATE 155 - Materials Selection and Process Design 3 *unit(s)*
- MATE 185 - Ceramics 3 *unit(s)*
- MATE 186 - Polymers 3 *unit(s)*
- MATE 195 - Mechanical Behavior of Materials 3 *unit(s)*
- MATE 198A - Senior Design Project 2 *unit(s)* (S)
- MATE 198B - Senior Design Project 2 *unit(s)* (V)
- ME 20 - Design and Graphics 2 *unit(s)*
- ENGR 195A - Global and Social Issues in Engineering 1 *unit(s)* (S)
- ENGR 195B - Global and Social Issues in Engineering 1 *unit(s)* (V)

Technical Electives (6 units)

Electives must be selected from the approved departmental list in consultation with the students' advisor.

Only students who are doing research on campus may be eligible for MATE 282. MATE 282 may be taken 2 times for a maximum of 6 units of technical elective credit. Only one section of MATE 280/MATE 280I/MATE 282 may be taken per semester.

Materials Engineering, MS (24 units)

Core Courses (15 units)

- CHE 200 - Research Methods 3 *unit(s)* (GWAR)
- MATE 205 - Advanced Mechanical Behavior of Solids 3 *unit(s)*
- MATE 215 - Solid State Materials Engineering 3 *unit(s)*
- MATE 241 - Advanced Methods of Materials Characterization 3 *unit(s)*
- MATE 251 - Advanced Solid State Thermodynamics 3 *unit(s)*

Approved Electives (3 units)

3 units of approved 200-level electives selected in consultation with a SAGE advisor.

Culminating Experience (6 units)

- MATE 281 - MS Thesis/Project Preparation Seminar 3 *unit(s)*
- MATE 280 - Graduate Research OR MATE 280I - Graduate Research Internship 2 *unit(s)*

Complete one course below for one unit.

- **Thesis Requirements:** Students opting to complete a master's thesis are responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the thesis committee chair. The student must also secure the commitments of two additional committee members, one of whom must be a full or part-time SJSU faculty member, to serve as the student's thesis committee. If the student is completing their thesis research off-site, then one person of their thesis committee must be at least a supervisor-level employee from that off-site facility. The student must write a thesis proposal and have it approved by the thesis committee in order to pass MATE 281. MATE 299 is taken in the semester the student expects to complete their final oral and written defense which will serve as their culminating experience. The MS candidate must successfully pass an oral defense and complete an approved thesis report in order to receive credit for MATE 299. Students must be enrolled in courses every semester with the exception of an approved leave of absence for one semester. Students who have finished all their 30 units with the exception of an RP grade in MATE 299 are eligible for enrollment in CHE 1290R for a reduced tuition fee. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.
- **Project Requirements:** Students opting to complete a graduate project are responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the project committee chair. The student must also secure the commitments of an additional committee member to serve as the student's project committee. If the student is completing their thesis project research off-site, then one person of their project committee must be at least a supervisor-level employee from that off-site facility. The student must write a project proposal and have it approved by the project committee in order to pass MATE 281. MATE 298 is taken in the semester the student expects to complete their final oral defense and written project report, which will serve as their culminating experience. The MS candidate must successfully pass an oral and defense and complete an approved written project report in order to receive credit for MATE 298. Students must be enrolled in courses every semester with the exception of an approved leave of absence for one semester. Students who have finished all their 30 units with the exception of an RP grade in MATE 298 are eligible for enrollment in CHE 1290R for a reduced tuition fee.
- MATE 298 - MS Research/Project 1-2 *unit(s)*
- MATE 298I - Master's Project Internship 1-2 *unit(s)*
- MATE 299 - Master's Thesis 1-3 *unit(s)*
- MATE 299I - Master's Thesis Internship 1-3 *unit(s)*

Total Units Required (141 units)

The standalone Materials Engineering, BS and Materials Engineering, MS programs require 9 units of Electives each. Students satisfy these requirements in this SAGE Scholars Program by completing 6 units of Technical Electives within the BS program and 3 units of Approved Electives within the MS program. These 9 units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

A maximum of 10 units of MATE 280/MATE 280I are allowed as part of the 24 units required for a MS Chemical Engineering degree.

SJSU Online

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. These upper division degree completion programs are offered through a special session that requires a separate application process. If interested, please contact one of our Enrollment Counselors for more information.

Interdisciplinary Engineering, BS (SJSU Online) (Currently Not Accepting Students)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

Our curriculum for the Degree Completion Program covers three primary areas - engineering management and statistical quality engineering, applied computing, and innovation and law. All three areas are applicable to a wide range of engineering and business practices, provide the skills and knowledge that serve existing and emerging technologies, and can provide a competitive advantage for students interested in opportunities in Interdisciplinary Engineering.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times convenient for the working learner).

Summary of Degree Units

Transfer Units	63
Interdisciplinary Courses	28
Technical Focus	18
Academic Breadth or Minor	12
Total	121

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (63 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better. However, 63 units of lower division may be completed at the community college.
- Applicants must also have completed the Core Lower Division General Education Requirements, except for GE Area A3 which is waived for this degree (36 units). Of the 36 units, 15 units are fulfilled by math, science, engineering, and second semester composition courses listed below.
- GE Area A3 (Critical Thinking/Logic) is waived for this degree. The remaining three CSU-approved Basics Skills courses must be completed with a C- or better for admission:

(A1) Oral Communication/Speech

(A2) Written English Composition

(B4) Math/Quantitative Reasoning (above the level of intermediate algebra)

- GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.
- Completion of at least 29 units of the Math and Science courses (or equivalents)
 - BIOL 10 - The Living World 3 *unit(s)* (B2+B3)
 - CHEM 30A - Introductory Chemistry 3 *unit(s)* (or CHEM 1A or CHEM 1B) (B1+B3)
 - MATH 30 OR MATH 30X - Calculus I 3 *unit(s)* (B4)
 - MATH 31 OR MATH 31X - Calculus II 4 *unit(s)* (B4)
 - MATH 32 OR MATH 32X - Calculus III 3 *unit(s)* (B4)
 - MATH 33A - Ordinary Differential Equations for SCI & ENGR OR MATH 33LA - Differential Equations and Linear Algebra OR MATH 42 - Discrete Mathematics 3 *unit(s)*
 - PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
 - PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- Completion of at least 12 units of the Engineering courses (or equivalents):
 - CMPE 30 - Programming Concepts and Methodology 3 *unit(s)* OR CS 46A - Introduction to Programming 4 *unit(s)*
 - EE 98 - Introduction to Circuit Analysis 3 *unit(s)*
 - ENGR 10 - Introduction to Engineering 3 *unit(s)* (E)
 - MATE 25 - Introduction to Materials OR CE 95 - Theory and Application of Statics 3 *unit(s)*

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements, except for GE Area A3 which is waived for this degree, (36 units) must be completed before transferring from a community college or any university.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (58 units)

Interdisciplinary Courses (28 units)

Complete the required courses:

- BUS3 186 - Professional and Business Ethics 3 *unit(s)* (S)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- ENGR 102 - Renewable Energy Engineering 3 *unit(s)*
- ENGR 120 - Programming Concepts for Behavioral and Social Science Applications 3 *unit(s)*
- ENGR 199A - Senior Design Project I 1 *unit(s)*
- ENGR 199B - Senior Design Project II 2 *unit(s)*
- ISE 102 - Engineering Economic Systems 3 *unit(s)*

- ISE 130 - Engineering Probability and Statistics 3 *unit(s)*
- ME 106 - Fundamentals of Mechatronics Engineering 4 *unit(s)*
- TECH 198 - Technology and Civilization 3 *unit(s)* (V)

Technical Focus (18 units)

Engineering Four Course Sequence (12 units)

- ISE 120 - Work Methods Design and Measurement 3 *unit(s)*
- ISE 131 - Statistical Process Control and Improvement 3 *unit(s)*
- ISE 140 - Operations Planning and Control 3 *unit(s)*
- ISE 151 - Engineering Management Systems in Global Society 3 *unit(s)*

Technical Electives (6 units)

- ENGR 121 - Data Structures and Algorithms for Behavioral and Social Science Applications 3 *unit(s)*
- ENGR 122 - Data Technology for Behavioral and Social Science Applications 3 *unit(s)*

Academic Breadth (12 units)

- ENGR 130 - Introduction to Intellectual Property for Engineers 3 *unit(s)*
- ENGR 131 - Introduction to Patents for Engineers 3 *unit(s)*
- ENGR 195E - Interdisciplinary Computing Project 3 *unit(s)*
- PHIL 137 - Puzzles in Innovation and Law 3 *unit(s)*

Total Units Required (121 units)

College of Health and Human Sciences

Formerly College of Applied Science and Arts

Office: MacQuarrie Hall 431

Telephone: (408) 924-2900

Email: health-human-sciences@sjsu.edu

Website: www.sjsu.edu/chhs

Leadership:

Audrey Shillington, Dean

Matthew Masucci, Associate Dean

Joseph (Joe) Grzywacz, Associate Dean of Research

Overview

The College of Health and Human Sciences provides both liberal and well-defined professional education at the undergraduate and graduate levels. Course work prepares students to be competent and transformative professionals in a technologically complex and culturally diverse society. The college's courses and programs provide students with a theoretical base that is developed and tested through: (1) research; (2) knowledge that can be applied in diverse systems; (3) processes that incorporate human understanding, social justice and cooperation, and (4)

supervised practice through internships, field work and/or preceptorships in a variety of career-related settings. Graduates become leaders and establish professional careers as administrators, educators, practitioners, information specialists and applied researchers in a variety of settings. These settings include both private and public agencies, government institutions at all levels, community and health care organizations and educational institutions. The College of Health and Human Sciences values and respects diversity, inclusion, civility and individual uniqueness; we recognize the strength these factors bring to our community and learning environment. All of our interactions should reflect trust, caring and mutual respect. We value education and intellectual curiosity above all. The academic freedom of faculty and students is vital to our role of promoting life-long learning through intellectual inquiry, scholarship and the pursuit of knowledge. An overarching goal is that faculty and our academic programs will be recognized for outstanding research, teaching and service across disciplinary and geographic boundaries. A list of programs and courses can be found on each department page in the catalog.

- Department of Aerospace Studies (Air Force ROTC)
- Department of Audiology
- Department of Kinesiology
- Department of Military Science (Army ROTC)
- Department of Nutrition, Food Science and Packaging
- Department of Occupational Therapy
- Department of Public Health and Recreation
- School of Social Work
- The Valley Foundation School of Nursing

College of Health and Human Sciences (CHHS) Student Success Center

Offices/Telephone: MacQuarrie Hall (MH) 533 / 408-924-2910; Health Building (HB) 105 / 408-924-8601

Email: CHHSsuccesscenter@sjsu.edu

Website: www.sjsu.edu/chhs-ssc

The College of Health and Human Sciences (CHHS) Student Success Center provides advising for undergraduate students majoring (or interested in majoring) in programs offered in CHHS Departments and Schools. Students are invited to stop by one of our two locations or call the Center for help with applying into a CHHS major, general education advising, academic policy related questions, peer mentoring, health professions advising, and/or to attend any of our various presentations and workshops.

The CHHS Student Success Center is also home to the Undeclared Pre-Nursing (UPN) Program, which is responsible for advising students in the UPN academic track. To find out more about the program and how to apply please visit us.

Internships

The departments/schools within the College offer internships that involve advanced practical experience, fieldwork or clinical experience in a professional work setting under direct supervision of qualified professionals. Interns would be assigned various duties and experiences related to their particular areas of specialization. Internships may include seminars, practica or preceptorships to further develop beginning and advanced level practice skills.

Teaching Credential Programs

The Department of Kinesiology, in collaboration with the Connie L. Lurie College of Education, provides two single subject professional programs designed for individuals who are interested in teaching physical education or adapted

physical education in grades K-12. The California School Nurse Credential prepares Registered Nurses at the Master's and Post Master's level to provide and manage health services and programs in the school setting.

Organized Research Units and Unique Programs

The programs of the College of Health and Human Sciences are further enriched by educational, research, global partnerships, as well as cultural and training opportunities provided by the following specialized research units and unique programs: Institute of Nursing Research and Practice, Human Rights Institute, Timpany Center, The Center for Applied Research on Human Services (CARHS), and the Center for Healthy Aging in Multicultural Populations (CHAMP).

SPARTANS Occupational Career Life Studies Program

The Successful Postsecondary Access & Related Transition Activities for Neurodiverse Students Occupational Career Life Studies (SPARTANS OCLS) Program is designed for college-aged students with intellectual disabilities who did not meet the original admission requirements at SJSU. The program aims to provide inclusive academic, social, and work experiences to support students in their pursuit of independent employment based on person-centered career goals.

Each student's path in the SPARTANS OCLS program will be individualized according to their person-centered plans. The program is a two-year, non-degree, non-residential program offered through a collaboration between the College of Health and Human Sciences, the Lurie College of Education, and Professional & Global Engagement at SJSU. The 36-unit program consists of the following components:

1. **General Education (GE) Requirements:** A minimum of 12 credits, including 1 course from each of the four GE areas, selected through person-centered planning;
2. **Job Track Requirements:** A minimum of 12 credit hours, selected through person-centered planning; and
3. **Supervised Job Internship(s):** A minimum of 12 units, including 6 units of SPARTANS OCLS Internship Seminar and 6 units of SPARTANS OCLS Internship for on- and off-campus job placements/internships related to the chosen job track.

Note: This program currently is not eligible for Federal Financial Aid.

Undergraduate Major(s)

Interdisciplinary Studies, Health Care Leadership Concentration, BS (SJSU Online)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process. The BS Interdisciplinary Studies, Health Care Leadership Concentration, offered by the College of Health and Human Sciences, is designed to give you the knowledge and skills you'll need to prepare you for professional health care careers in a global market. Coursework focuses on health care leadership skills, financial principles, management strategies and standards to improve patient care. You'll take courses in the physical and social sciences giving you a well rounded education to pursue careers in allied health roles or to prepare you for entry into a variety of health-related graduate degree programs. The flexibility offered by the interdisciplinary degree in Health Care Leadership, and the practical skills learned in the program, lead to many exciting careers in fields as diverse as public health, health education and administration, marketing and public relations, media, policy,

research, clinical care, biotechnology, pharmaceutical development and sales, worksite wellness, politics, government, and environmental health among others.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Requirements	3
Major Requirements	42
University Electives	15
Total	120

Program Roadmaps

The 2-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums) and elective classes that are best suited to your career goals.

Transfer Units (60 units)

All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.

Applicants must also have completed the Core Lower Division General Education Requirements (39 units), including all four CSU-approved Basics Skills courses, each with a C- or better:

- (A1) Oral Communication/Speech
- (A2) Written English Composition
- (A3) Critical Thinking/Logic
- (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)

- STAT 95 OR PH 67 recommended

GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.

University Requirements (3 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

- KIN 169 - Diversity, Stress and Health 3 *unit(s)* (Area S)
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (Area R)
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (Area V)

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Recommended:

- NUFS 100W - Writing Workshop 3 *unit(s)* (WID)
- PH 100W - Writing Workshop 3 *unit(s)* (WID)

Major Requirements (42 units)

- KIN 146 - Introduction to Exercise Technology 3 *unit(s)*
- KIN 151 - Sports and Fitness Marketing 3 *unit(s)*
- KIN 169 - Diversity, Stress and Health 3 *unit(s)* (S)
- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 114A - Community Nutrition for Majors 3 *unit(s)*
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (V)
- PH 99 - Introduction to Public Health 3 *unit(s)*
- PH 102 - Health Team Building 3 *unit(s)*
- PH 103 - Introduction to Health Policy 3 *unit(s)*
- PH 162 - Health Care Organization and Admin 3 *unit(s)*

- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)
- RECL 152 - Non-Profit Leadership & Management 3 *unit(s)*
- SCWK 130 - Human Behavior in the Social Environment I 3 *unit(s)*
- SCWK 131 - Human Behavior in the Social Environment II 3 *unit(s)*

University Electives (15 units)

Total Units Required (120 units)

Kinesiology, BS

Satisfactory completion of the requirements of the four-year major program in Kinesiology, offered by the Department of Kinesiology, leads to a BS degree. The program is based upon the discipline of kinesiology and stresses both theoretical and practical objectives. Five areas of specialization are offered.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	18
Core Courses	23
Area Specialization	38
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

Students in this major must complete all Requirements for the Major (All courses in Preparation, Core, Concentration/Specialization) with a "C- or better" to graduate. The following courses in Preparation of major must be passed with a "C or better": KIN 100W.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 unit(s) (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 unit(s) (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 unit(s) (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 unit(s) (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (18 units)

- BIOL 65 - Human Anatomy 4 unit(s) (B2+B3) (BIOL 650 may also be used to meet this requirement. This course does not include a human cadaver lab.)
- BIOL 66 - Human Physiology 5 unit(s) (B2+B3)
- CHEM 30A - Introductory Chemistry 3 unit(s) (B1+B3)
- KIN 100W - Writing Workshop 3 unit(s) (WID)
- Mathematics/Quantitative Reasoning 3 unit(s) (Area B4) * STAT 95 Recommended

Major Requirements (61 units)

Core Courses (23 units)

- KIN 70 - Introduction to Kinesiology 3 unit(s)
- KIN 155 - Exercise Physiology 3 unit(s)
- KIN 158 - Biomechanics 3 unit(s)
- KIN 175 - Measurement and Evaluation in Kinesiology 3 unit(s)
- KIN 185 - Senior Seminar 1 unit(s)

Complete one course from:

- KIN 160 - History of Sport and Physical Education 3 unit(s)
- KIN 161 - Philosophical Perspectives of Sport 3 unit(s)
- KIN 164 - Sociocultural Perspectives 3 unit(s)

Complete one course from:

All specializations, except Sports Management and Culture, require both KIN 165 and KIN 166.

- KIN 165 - Motor Development 3 *unit(s)*
- KIN 166 - Motor Learning 3 *unit(s)*

Physical Activity Courses:

- Four activity courses from at least four different movement areas (In addition to university graduation requirement) 4 *unit(s)*

Area of Specialization (38 units)

Specializations are a cluster of courses used by departments for advising purposes. Specializations will **not** appear on transcripts or diplomas. Specialization coursework, along with the Kinesiology Core Courses, is typically undertaken during the junior and senior years following completion of General Education Requirements. Specialization coursework can be taken simultaneously with the Core Courses.

Choose one area of study:

- Exercise and Fitness Specialist
- Inclusive Physical Activity in Communities (IPAC)
- Rehabilitation Science
- Sport Management and Culture
- Individualized Studies

Transfer Curriculum Studies is designed for students with an AA-T in Kinesiology. View the roadmap for Associate Degrees (ADT) Pathways for more information.

Exercise and Fitness Specialist

The Exercise and Fitness Specialist specialization includes coursework to develop knowledge and skills to work in corporate fitness, as a personal trainer, in clinical exercise programs, and a variety of other fitness and exercise related professions.

To fulfill GE areas B4 and D, STAT 95 and PSYC 1 are recommended.

Sub-Core Courses (26 units)

- KIN 147 - Biomechanical Assessment of Movement 3 *unit(s)*
- KIN 154B - ECG Interpretations and "Graded" Exercise Testing 3 *unit(s)*
- KIN 157 - Physiological Assessment 3 *unit(s)*
- KIN 162 - Advanced Fitness Assessment and Exercise Prescription 3 *unit(s)* (fall only)
- KIN 187 - Clinical Exercise Physiology 3 *unit(s)*
- KIN 198 - Internship in Kinesiology 1-6 *unit(s)* (*Complete 2 units*)

Complete one course (3 units):

- KIN 151 - Sports and Fitness Marketing 3 *unit(s)* (fall only)
- KIN 152 - Theory of Sport and Fitness Management 3 *unit(s)*
- KIN 153 - Sport Facility and Event Management 3 *unit(s)*

Complete one course, whichever not taken in the KIN core (3 units):

- KIN 165 - Motor Development 3 *unit(s)*
- KIN 166 - Motor Learning 3 *unit(s)*

Complete one course (3 units):

- KIN 167 - Sports Psychology 3 *unit(s)*
- KIN 168 - Psychology of Coaching 3 *unit(s)*
- KIN 176 - Exercise Psychology 3 *unit(s)*

Guided Electives (12 units)

Complete 12 units of guided electives in consultation with Department advisor. Maximum of 2 nutrition, 1 sport management, and 1 psychology course may be used as guided electives. Subcore and guided electives cannot be double counted. Other guided electives may be approved by Department advisor.

- KIN 69 - Stress Management: A Multidisciplinary Perspective 3 *unit(s)* (E)
- KIN 145A - Physical Activity for Older Adults 3 *unit(s)*
- KIN 146 - Introduction to Exercise Technology 3 *unit(s)*
- KIN 151 - Sports and Fitness Marketing 3 *unit(s)* (fall only) **OR** KIN 152 - Theory of Sport and Fitness Management 3 *unit(s)* **OR** KIN 153 - Sport Facility and Event Management 3 *unit(s)* (whichever not taken in EFS subcore)
- KIN 156 - Introduction to Adapted Physical Activity 3 *unit(s)*
- KIN 163 - Science of Physical Fitness and Nutrition 3 *unit(s)* (R)
- KIN 167 - Sports Psychology 3 *unit(s)* **OR** KIN 168 - Psychology of Coaching 3 *unit(s)* **OR** KIN 176 - Exercise Psychology 3 *unit(s)* (fall only) (whichever not taken in EFS subcore)
- KIN 169 - Diversity, Stress and Health 3 *unit(s)* (S)
- KIN 180 - Independent Study 1-6 *unit(s)* (3 units)
- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)* (E) **OR** NUFS 9 - Introduction to Human Nutrition 3 *unit(s)* (E)
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS 123 - Nutrition for Sport 3 *unit(s)*
- PSYC 110 - Adult Psychopathology 3 *unit(s)*
- Other guided electives as approved by Department advisor

Inclusive Physical Activity in Communities (IPAC)

The Inclusive Physical Activity in Communities (IPAC) specialization prepares students to work and teach in the community, with an emphasis on working with special populations, particularly individuals with disabilities and older adults. This specialization can also serve as undergraduate-level preparation for the Master of Science and Doctorate in Occupational Therapy (please see note after the listed required coursework). The IPAC curriculum provides students with the specialized skills and knowledge to provide effective service delivery to individuals with disabilities, older adults, and other diverse populations in a physical activity setting. Students in the IPAC specialization develop competencies in planning, assessing, coordinating, implementing, evaluating and advocating appropriate inclusive physical activity across the lifespan. Coursework in the IPAC specialization prepares students for careers in a variety of fields including: infant/toddler programs, physical activity for older adults in recreation or residential facilities, spinal cord injury rehabilitation centers, aquatic facilities, residential/seasonal camps, health/fitness clubs, disability sport programs, and after school/community transition sites.

To fulfill GE areas B4 and D, STAT 95 and PSYC 1 are recommended.

Sub-Core Courses (26 units)

- EDSE 14A - American Sign Language I 3 *unit(s)*
- KIN 107 - Adapted Aquatics 2 *unit(s)*
- KIN 108 - Adapted Physical Activity for Young Adults with Disabilities 2 *unit(s)*
- KIN 156 - Introduction to Adapted Physical Activity 3 *unit(s)*
- KIN 159 - Sport and Adapted Activities 3 *unit(s)*
- KIN 174 - Assessment of Psychomotor Function 3 *unit(s)*
- KIN 187 - Clinical Exercise Physiology 3 *unit(s)*
- KIN 198 - Internship in Kinesiology 1-6 *unit(s)* (Complete 1 unit)

Complete one course (3 units):

- KIN 153 - Sport Facility and Event Management 3 *unit(s)*
- RECL 97 - Event Planning 3 *unit(s)*

Complete one course, whichever not taken in the KIN core (3 units):

- KIN 165 - Motor Development 3 *unit(s)*
- KIN 166 - Motor Learning 3 *unit(s)*

Guided Electives (12 units)

Complete 12 units of guided electives in consultation with Department advisor.

- ART 46 - Introduction to Ceramics 3 *unit(s)* ** **OR** other acceptable skills class such as textile or painting. Consult advisor and see the ART courses.
- GERO 107 - Aging and Society 3 *unit(s)* (S)
- KIN 145A - Physical Activity for Older Adults 3 *unit(s)*
- KIN 146 - Introduction to Exercise Technology 3 *unit(s)*
- KIN 162 - Advanced Fitness Assessment and Exercise Prescription 3 *unit(s)* (fall only)
- KIN 167 - Sports Psychology 3 *unit(s)*
- KIN 168 - Psychology of Coaching 3 *unit(s)*
- KIN 169 - Diversity, Stress and Health 3 *unit(s)* (S)
- KIN 176 - Exercise Psychology 3 *unit(s)*
- KIN 180 - Independent Study 1-6 *unit(s)* (3 units)
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS / KIN 163 - Science of Physical Fitness and Nutrition 3 *unit(s)* (R)
- OCTH 190 - Foundations of Neuroscience for Occupational Therapy 3 *unit(s)* (spring and summer only) **
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D) ** (may NOT be used as Guided Elective if being used to satisfy Area D requirement)
- PSYC 110 - Adult Psychopathology 3 *unit(s)* **
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)** (may NOT be used as Guided Elective if being used to satisfy Area B4 requirement)
- Other guided electives as approved by Department advisor.

**** SJSU Pre-OT students must have 4 of the 8 prerequisites completed before applying for either the Master of Science or OT Doctorate Program. All SJSU OT prerequisite coursework must earn a B or better to count towards application to the program. Complete information about the OT Master's Program is available in the Occupational Therapy, MS section of this catalog or on the program website. Complete information about the OT Doctorate program is available in the Occupational Therapy Doctorate section of this catalog or on the program website.**

Rehabilitation Science

The Rehabilitation Science specialization is designed for students interested in allied health professions, such as physical therapy, chiropractic, and physician's assistant. Coursework is designed to develop knowledge and skills to pursue a future in physical therapy, chiropractic, medical school, or other health or rehabilitation careers.

To fulfill GE areas B4 and D, STAT 95 and PSYC 1 are recommended.

Sub-Core Courses (32 units)

- CHEM 1A - General Chemistry 5 unit(s) (B1B3)
- CHEM 1B - General Chemistry 5 unit(s) (B1B3)
- PHYS 2A - Fundamentals of Physics 4 unit(s) (B1B3)
- PHYS 2B - Fundamentals of Physics 4 unit(s) (B1B3)
- KIN 147 - Biomechanical Assessment of Movement 3 unit(s)
- KIN 157 - Physiological Assessment 3 unit(s)
- KIN 198 - Internship in Kinesiology 1-6 unit(s) (Complete 2 units)

Complete one course, whichever not taken in the KIN core (3 units):

- KIN 165 - Motor Development 3 unit(s)
- KIN 166 - Motor Learning 3 unit(s)

Complete one course (3 units):

- KIN 176 - Exercise Psychology 3 unit(s)
- KIN 187 - Clinical Exercise Physiology 3 unit(s)

Guided Electives (6 units)

Complete 6 units of guided electives in consultation with Department advisor.

- BIOL 109 - Human Neuroanatomy and Physiology 4 unit(s)
- BIOL 129 / PSYC 129 - Neuroscience 3 unit(s)
- KIN 146 - Introduction to Exercise Technology 3 unit(s)
- KIN 156 - Introduction to Adapted Physical Activity 3 unit(s)
- KIN 159 - Sport and Adapted Activities 3 unit(s)
- KIN 163 - Science of Physical Fitness and Nutrition 3 unit(s) (R)
- KIN 167 - Sports Psychology 3 unit(s) **OR** KIN 176 - Exercise Psychology 3 unit(s) **OR** KIN 187 - Clinical Exercise Physiology 3 unit(s) (if not taken in Rehab Science subcore)
- KIN 169 - Diversity, Stress and Health 3 unit(s) (S)
- KIN 180 - Independent Study 1-6 unit(s)

- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D) (may NOT be used as Guided Elective if being used to satisfy Area D requirement)
- PSYC 110 - Adult Psychopathology 3 *unit(s)*
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (may NOT be used as Guided Elective if being used to satisfy B4 math requirement)
- Other guided electives as approved by Department advisor.

Sport Management and Culture

The purpose of the Sport Management and Culture (SMC) specialization is to provide an interdisciplinary understanding of sport management with a particular focus on social and cultural issues. Social justice and diversity issues are highlighted from a critical cultural studies perspective. Additionally, students interested in sports studies gain a background in sport management, strengthening their professional preparation.

To fulfill GE areas B4 and D, STAT 95 and PSYC 1 are recommended.

Sub-Core Courses (22-24 units)

- KIN 151 - Sports and Fitness Marketing 3 *unit(s)* (fall only)
- KIN 152 - Theory of Sport and Fitness Management 3 *unit(s)*
- KIN 153 - Sport Facility and Event Management 3 *unit(s)*
- Internship #1: Complete 3 units of KIN 198 - Internship in Kinesiology 1-6 *unit(s)*

Complete two courses, whichever not taken in the KIN core (6 units):

- KIN 160 - History of Sport and Physical Education 3 *unit(s)*
- KIN 161 - Philosophical Perspectives of Sport 3 *unit(s)*
- KIN 164 - Sociocultural Perspectives 3 *unit(s)*

Complete one course (3 units):

- KIN 167 - Sports Psychology 3 *unit(s)*
- KIN 168 - Psychology of Coaching 3 *unit(s)*

Internship #2: Complete 1-3 units of

- KIN 180 - Independent Study 1-6 *unit(s)*
- KIN 198 - Internship in Kinesiology 1-6 *unit(s)*

Guided Electives (14-16 units)

Complete 14-16 units of guided electives in consultation with Department advisor. A maximum of 6 units may be taken at the lower division level **OR** a Business Minor, Sociology Minor, Psychology Minor, Journalism Minor, or other minor selected in consultation with Departmental Advisor.

- AAS 175 - Asian American Communities 3 *unit(s)*
- AFAM 155A - Triumphs and Trials of the Black Athlete in the U.S., 1850-1999 3 *unit(s)* **OR** AFAM 155B - Triumphs and Trials of the Black Athlete in the U.S., 2000-Present 3 *unit(s)*
- BUS3 160 - Fundamentals of Management and Organizational Behavior 3 *unit(s)*

- CCS 130 - Chicanas and Chicanos in American Society 3 *unit(s)* (S)
- KIN 111 - Sport & Movement in a Global Context 3 *unit(s)* (V)
- KIN 146 - Introduction to Exercise Technology 3 *unit(s)*
- KIN 167 - Sports Psychology 3 *unit(s)* **OR** KIN 168 - Psychology of Coaching 3 *unit(s)* (whichever not taken in SMC subcore)
- KIN 169 - Diversity, Stress and Health 3 *unit(s)* (S)
- KIN 176 - Exercise Psychology 3 *unit(s)*
- PSYC 154 - Social Psychology 3 *unit(s)*
- SOCI 172 - Lesbian, Gay, Bi, Transgender Studies 3 *unit(s)*
- SOCI 175 - Sociology of Masculinities and Femininities 3 *unit(s)*
- WGSS 160 - Queering Gender, Race, and Class 3 *unit(s)*
- Other guided electives as approved by Department advisor.

Individualized Studies

This area of specialization is designed to provide students with the opportunity to develop an individualized program of study. This pathway to the baccalaureate degree may be of particular interest to students needing considerable flexibility in designing a program of study to facilitate pursuit of an advanced degree or a specific career (e.g., sport broadcasting). The Individualized Studies specialization requires advising manager and undergraduate coordinator approval. All coursework beyond the core must be selected in consultation with the student's academic advisor and is expected to form a **coherent program of study** that meets the student's **personal and professional goals**.

Criteria for Individualized Studies Specialization

1. The curriculum should evidence breadth and depth of understanding in a specific area of interest within the field of Kinesiology.
2. The program should exhibit a specific area of interest within Kinesiology as a focal point.
3. The program should include 18 upper division Kinesiology coursework units (in addition to the core requirements), which includes 1-3 units of internship/fieldwork. The program should include 17-19 upper or lower division electives in kinesiology or a related field selected in consultation with departmental advisor.
4. The program should conform to the career objectives submitted as a part of the formal Individualized Studies Proposal (refer to the Kinesiology Undergraduate Handbook).
5. All courses should be adequately justified as a logical inclusion in this program.
6. The program must be submitted **at least 30 units** prior to the student's anticipated graduation date.

Sub-Core Courses (38 units)

- KIN 198 - Internship in Kinesiology 1-6 *unit(s)* (complete 1-3 units)
- Upper Division Kinesiology Coursework selected in consultation with the student's academic advisor 18 *unit(s)*
- Upper or Lower Division Electives in Kinesiology or a related field selected in consultation with Departmental Advisor 17-19 *unit(s)*

Total Units Required (120 units)

Kinesiology, Preparation for Teaching, BS

This major is designed for students interested in teaching physical education in high school or middle school. The BS Kinesiology, Preparation for Teaching, offered by the Department of Kinesiology, is a California Commission on

Teacher Credentialing (CTC) approved subject matter preparation program (SMPP) to attain subject matter competency (SMC). SMC is needed for entry into a physical education single subject credential program. To attain SMC, individuals who do not wish to complete this degree program must pass all portions of the appropriate Commission-approved subject matter examination(s) or meet requirements through a combination of coursework and exams after completion of a bachelor's degree.

Minimum grade point average (GPA) criteria and grades above a C- may be required for verification of subject matter competency. Completion of this degree program will not guarantee admission to SJSU's credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See "How to Become a Teacher" for information on application and admission to credential programs.

Note: Students who wish to complete or have completed another major should consult with a Department of Kinesiology advisor who specializes in teacher preparation to determine requirements for single subject matter competency certification in physical education.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	18
Major Core Requirements	23
Concentration Requirements	38
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

Students in this major must complete all courses Required in the Major (All courses in Preparation, Core, Concentration/Specialization) with a "C- or better" to graduate. The following courses in Preparation of major must be passed with a "C or better": KIN 100W.

Adapted Physical Education Added Authorization

The Adapted Physical Education Added Authorization (APEAA) allows an educator to provide students with disabilities a specially designed physical education program as determined by the Commission on Teacher Credentialing (CTC).

Students in the Kinesiology, Preparation for Teaching major take 5 of the 6 required APEAA courses; completing these courses will help students to efficiently obtain the APEAA upon completion of their single subject PE credential. If interested in obtaining the APEAA, students should contact the program co-coordinators Dr. Jihyun Lee and Dr. Erin Siebert.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (18 units)

- BIOL 65 - Human Anatomy 4 *unit(s)* (B2+B3) (BIOL 65O may also be used to meet this requirement. This course does not include a human cadaver lab.)
- BIOL 66 - Human Physiology 5 *unit(s)* (B2+B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- KIN 100W - Writing Workshop 3 *unit(s)* (WID)
- Mathematics/Quantitative Reasoning 3 *unit(s)* (Area B4)

Major Requirements (61 units)

Core Courses (23 units)

- KIN 70 - Introduction to Kinesiology 3 *unit(s)*
- KIN 155 - Exercise Physiology 3 *unit(s)*
- KIN 158 - Biomechanics 3 *unit(s)*
- KIN 175 - Measurement and Evaluation in Kinesiology 3 *unit(s)*
- KIN 185 - Senior Seminar 1 *unit(s)*

Physical Activity Courses:

- Four activity courses from at least four different movement areas (In addition to university graduation requirement) 4 *unit(s)*

Complete one course:

- KIN 160 - History of Sport and Physical Education 3 *unit(s)*
- KIN 161 - Philosophical Perspectives of Sport 3 *unit(s)*
- KIN 164 - Sociocultural Perspectives 3 *unit(s)*

Complete one course:

- KIN 165 - Motor Development 3 *unit(s)*
- KIN 166 - Motor Learning 3 *unit(s)*

Major Required Courses (38 units)

- KIN 105 - Water Safety Instructor's Course 2 *unit(s)* (*Age requirement, minimum of 18 years*)
- KIN 107 - Adapted Aquatics 2 *unit(s)*
- KIN 108 - Adapted Physical Activity for Young Adults with Disabilities 2 *unit(s)*
- KIN 156 - Introduction to Adapted Physical Activity 3 *unit(s)*
- KIN 159 - Sport and Adapted Activities 3 *unit(s)*
- KIN 172 - Elementary School Programs, K-6 3 *unit(s)* (*spring only*)
- KIN 173 - Introduction to Teaching Physical Education and Non-Traditional Sports 3 *unit(s)* (*fall only*)
- KIN 174 - Assessment of Psychomotor Function 3 *unit(s)*
- KIN 178 - Management Practices for Physical Education Teachers 3 *unit(s)* (*fall only*)
- KIN 179 - Design and Assessment of Movement Experiences 3 *unit(s)* (*spring only*)
- 2 Additional Activity courses (by advisement) 2 *unit(s)*
(*Movement Areas for Activity Courses*)

Motor Course

Complete the course not taken in Major Core Courses.

- KIN 165 - Motor Development 3 *unit(s)*
- KIN 166 - Motor Learning 3 *unit(s)*

Psychology Course

Complete one course from:

- KIN 167 - Sports Psychology 3 *unit(s)*
- KIN 168 - Psychology of Coaching 3 *unit(s)*
- KIN 176 - Exercise Psychology 3 *unit(s)*

Guided Elective

Complete 3 units in consultation with Department Advisor:

- KIN 111 - Sport & Movement in a Global Context 3 *unit(s)* (V)
- KIN 146 - Introduction to Exercise Technology 3 *unit(s)*

- KIN 151 - Sports and Fitness Marketing 3 *unit(s)* (*fall only*)
- KIN 163 - Science of Physical Fitness and Nutrition 3 *unit(s)* (*R*)
- KIN 167 - Sports Psychology 3 *unit(s)* **OR** KIN 168 - Psychology of Coaching 3 *unit(s)* **OR** KIN 176 - Exercise Psychology 3 *unit(s)* (*whichever not previously taken*)
- KIN 169 - Diversity, Stress and Health 3 *unit(s)* (*S*)
- KIN 180 - Independent Study 1-6 *unit(s)*
- KNED 339 - Instructional Materials and Procedures in Physical Education 3 *unit(s)*

Total Units Required (120 units)

Nursing, BS

Undergraduate Coordinator and Advisor: Dr. Vivian Wong.

The Valley Foundation School of Nursing prepares you for professional careers with a baccalaureate degree in nursing.

Students should be aware that the application requirements and prerequisite courses are subject to change. Interested students should check the Nursing web page frequently for updates and changes.

Summary of Degree Units

University Graduation Requirements	24
Major Preparation	35
Major Requirements	61
Total	120

Program Roadmaps

The 4.5-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses required in the major (preparation, major, and electives) require a grade of "C" or better or "Credit" (see admission implication supplemental criteria). In addition, students must pass background and drug clearances. Policies are posted on The Valley Foundation School of Nursing website.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (15 units)

Of the 39 units required by the university, 24 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details. Of the 39 units, the following 12 units are not satisfied in the major:

- Area A3 Critical Thinking and Writing 3 *unit(s)*
- Area C Arts and Letters 9 *unit(s)*
- GE Area F Ethnic Studies 3 *unit(s)*

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details. Of the 9 units, the following 3 units are not satisfied in the major.

- Area V Culture, Civilization & Global Understanding (3 units)

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For students in the Nursing, BS major, the Graduation Writing Assessment Requirement (GWAR) is fulfilled with NURS 100WE - Evidence Based Practice Writing Workshop.

Major Preparation (35 units)

- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- COMM 20 - Public Speaking 3 *unit(s)* (A1)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- BIOL 65 - Human Anatomy 4 *unit(s)* (B2+B3)
BIOL 65O may also be used to meet this requirement.
- BIOL 66 - Human Physiology 5 *unit(s)* (B2+B3)
- MICR 20 - General Bacteriology 5 *unit(s)* (B2+B3)
- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)
MATH/UNVS 15 may be used in lieu of the statistics course required by this major.

Additional Major Support (6 units)

- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)

Major Requirements (61 units)

Semester 1

- NURS 10 - Leadership I 2 *unit(s)*

- NURS 11 - Introduction to Pharmacology 2 *unit(s)*
- NURS 12 - Health Assessment & Skills I 3 *unit(s)*
- NURS 13A - Gerontological Nursing Theory 2 *unit(s)*
- NURS 13B - Geriatric Nursing Practicum 1 *unit(s)*
- NURS 100WE - Evidence Based Practice Writing Workshop 3 *unit(s)* (WID)

Semester 2

- NURS 20A - Adult Care Management I 4 *unit(s)*
- NURS 20B - Adult Care Clinical Practicum I 3 *unit(s)*
- NURS 22 - Health Assessment & Skills in Nursing II 2 *unit(s)*
- NURS 123A - Mental Health Theory 3 *unit(s)*
- NURS 123B - Mental Health Practicum 2 *unit(s)*

Semester 3

- NURS 32 - Health Assessment & Skills III 1 *unit(s)*
- NURS 161 - Leadership II 2 *unit(s)*
- NURS 165A - Child Health Theory 3 *unit(s)*
- NURS 165B - Child Health Practicum 2 *unit(s)*
- NURS 168A - Maternal Newborn Theory 3 *unit(s)*
- NURS 168B - Maternal Newborn Practicum 2 *unit(s)*

Semester 4

- NURS 166 - Simulation I 1 *unit(s)*
- NURS 167A - Adult Care Management II 4 *unit(s)*
- NURS 167B - Adult Care Clinical Practicum II 3 *unit(s)*
- NURS 164AR - Community Health Theory for Nursing BS Program 3 *unit(s)* (R)
- NURS 164B - Community Health Practicum 3 *unit(s)*

Semester 5

- NURS 177 - Senior Preceptorship 4 *unit(s)*
- NURS 178 - Leadership III 3 *unit(s)* (S)

Total Units Required (120 units)

Nursing, Concurrent Enrollment Program (CEP) ADN to BSN

Dual Admission Program Between SJSU and Evergreen Valley Community College

The Nursing, Concurrent Enrollment Program (CEP) ADN to BSN (formerly Nursing, Integrated Community College Pathway, BS (ICCP) is a joint program between Evergreen Valley Community College (EVCC) and The Valley Foundation School of Nursing in which students are concurrently enrolled in both. The CEP program allows students to complete an Associate Degree in Nursing, apply and sit for the National Council Licensure Examination for Nurses (NCLEX-RN), and complete post licensure nursing content and upper general education courses to earn a BS Nursing.

Summary of Degree Units

University Graduation Requirements	3
EVC Lower Division Transfer Units	70
NCLEX - RN Examination	20
Major Requirements	24
University Electives	3
Total	120

Program Roadmap

Students enrolled in the CEP follow the Concurrent Enrollment Program ADN to BSN roadmap designed to satisfy the Associate Degree in Nursing from EVC and the Nursing BS requirements in 5 semesters or only 2.5 years of enrollment at SJSU.

- **Semester one** requires students to take one nursing course at SJSU and 9 units of the EVCC Associate Degree in Nursing Program.
- **Semester two** requires students to take two nursing course at SJSU and 9 units of the EVCC Associate Degree in Nursing Program
- **Semester three** requires students to take two SJSU courses (one SJSU nursing course and one SJSU elective course), and 9 units of the EVCC Associate Degree in Nursing Program.
- **Semester four** requires students to take 9 units of the EVCC Associate Degree in Nursing Program and two SJSU courses (one SJSU nursing course and one Upper Division GE Course (Area V), and will complete any other remaining Undergraduate University Graduation Requirements.
- Students completing semester four will apply and pass the **NCLEX-RN examination** before entering into the final semester of the CEP program.
- **Semester five** continues with four SJSU nursing courses.

Failure to Progress

The CEP program is a rigorous curriculum that will require strict criterion for participation. For students who enter the program the following criteria has been agreed upon.

1. Students who fall out of progression within the Associate Degree Program will defer to EVCC's progression and disqualification policies. Students who are disqualified from EVCC are automatically disqualified from SJSU's CEP program.
2. Students who do not pass the NCLEX-RN examination during the interim semester will have the option to move out of the CEP program and into the existing Nursing, RN to BSN Concentration, BSN program at SJSU when licensure is obtained. The impact to the student may include additional semesters of course work depending on when the student obtains licensure.
3. Students who fail any SJSU nursing courses during semesters 1 thru 4 of the CEP program will be moved into the existing regular EVCC program and removed from the CEP. Students can apply to the Nursing, RN to BSN Concentration, BSN program at SJSU after graduating from the ADN program as a regular progression student.

Major-Specific Graduation Requirements

All courses required in the major require a grade of "C" or better or "Credit" (see admission impaction supplemental criteria for exceptions). In addition, students must pass background and drug clearances. Policies are posted on The Valley Foundation School of Nursing website.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with the major advisor for details.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (90 units)

Evergreen Community College Coursework (70 units)

Transferred from EVCC Associate Degree in Nursing Program.

External Exam Credit (20 units)

NCLEX - RN examination

Students admitted to the program will receive 20 units of credit for passage of the National Council Licensure Examination (NCLEX) for Registered Nurses.

Major Requirements (24 units)

- NURS 100WE - Evidence Based Practice Writing Workshop 3 *unit(s)* (WID)
- NURS 112 - Professional Practice Success I 3 *unit(s)*
- NURS 113 - Professional Practice Success II 3 *unit(s)*
- NURS 171 - Theoretical Foundations 3 *unit(s)*
- NURS 172R - Community Health Theory for RN to BSN Program 3 *unit(s)*
- NURS 173 - Community Health Practicum 3 *unit(s)*
- NURS 177A - Senior Preceptorship 3 *unit(s)*
- NURS 178A - Leadership 3 *unit(s)* (S)

University Electives (3 units)

Total Units Required (120 units)

Nursing, RN to BSN Concentration, BSN

RN to BSN Concentration, Program Coordinator and Advisor: Dr. Lisa Rauch.

Admittance into this degree offered by The Valley Foundation School of Nursing requires an Associate in Science degree in Nursing (ADN) and passage of the NCLEX - National Council Licensure Examination (by the second semester of the RN to BSN program) by the state of California, and completion of the 4 prerequisite courses Chemistry, Public Speaking, Critical Thinking, and Statistics.

Admission occurs every Fall semester. The RN to BSN program can be completed in 3 semesters of full-time study.

Summary of Degree Units

University Graduation Requirements	3
Community College Lower Division Coursework	70
External Exam Credit (NCLEX - RN Exam)	20
Major Requirements	24
University Electives	3
Total	120

Program Roadmaps

The 3 semester Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses required in the major require a grade of "C" or better or "Credit" (see admission impaction supplemental criteria). In addition, students must pass background and drug clearances. Policies are posted on The Valley Foundation School of Nursing website.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

Of the 39 units required by the university, 39 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by major coursework outlined below. Consult with the major advisor for details. Of the 9 units, the following 3 units are not satisfied in the major.

- Area V 3 unit(s)

American Institutions

The 6 units of American Institutions (US123) requirement may be satisfied in the major (if identified below) or by transfer from a community college or university. Other courses meet the American Institutions requirement, but may not include additional GE areas.

Consult major advisor for department recommended coursework to meet GE requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For students in the Nursing RN to BSN Concentration, the Graduation Writing Assessment Requirement (GWAR) is fulfilled with NURS 100WE - Evidence Based Practice Writing Workshop.

Major Preparation (90 units)

Community College Lower Division Coursework (70 units)

Community College lower division coursework necessary for Associate Degree in Nursing (ADN).

External Exam Credit (20 units)

NCLEX - RN examination

Students admitted to the program will receive 20 units of credit for passage of the National Council Licensure Examination (NCLEX) for Registered Nurses in their final semester of the program.

Major Requirements (24 units)

Semester 1

- NURS 100WE - Evidence Based Practice Writing Workshop 3 unit(s) (WID)
- NURS 112 - Professional Practice Success I 3 unit(s)
- NURS 171 - Theoretical Foundations 3 unit(s)

Semester 2

- NURS 172R - Community Health Theory for RN to BSN Program 3 unit(s) (R)
- NURS 173 - Community Health Practicum 3 unit(s)
- NURS 113 - Professional Practice Success II 3 unit(s)

Semester 3

- NURS 178A - Leadership 3 unit(s) (S)
- NURS 177A - Senior Preceptorship 3 unit(s)

University Electives (3 units)

Total Units Required (120 units)

Nutritional Science, Applied Nutrition and Food Sciences Concentration, BS

The Bachelor of Science in Nutritional Science with a concentration in Applied Nutrition and Food Sciences, offered by the Department of Nutrition, Food Science and Packaging, provides students with the education and background needed to gain employment in settings as diverse as community organizations, educational institutions, hospitals, health and fitness, nutrition and research laboratories, corporations and government agencies. The course plan emphasizes providing a scientific foundation in introductory chemistry, bacteriology and human physiology. Support courses in psychology, statistics and economics also provide a strong background. Numerous courses in nutrition education, health in multicultural populations, community nutrition, food science, epidemiology, food safety and sanitation, cultural aspects of food, as well as nutrition, provide the industry-focused education needed for the graduates to succeed in their careers. Students complete a field experience course planned for a higher level of work responsibilities with enrollment as a senior for 90 hours. A carefully prepared multi-year program of study will ensure an appropriate sequencing of required courses and students should seek early and frequent advice from departmental advisors.

The Concentration course plan meets the Program Learning Outcomes established for the Department. The BS degree in Nutritional Science with a Concentration in Applied Nutrition and Food Sciences is a regimented degree plan for students who wish to develop a focused set of skills to be successful in the community environment and the food industry.

- Program Learning Outcomes

Major-Specific Graduation Requirements

Students in this major must have an overall 2.5 average across the courses in the major to graduate.

Summary of Degree Units

University Graduation Requirements	32
Major Preparation	19
Major Core Requirements	34
Concentration Requirements	32
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or Specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (19 units)

- BIOL 66 - Human Physiology 5 unit(s) (B2+B3)
- CHEM 1A - General Chemistry 5 unit(s) (B1+B3)
- CHEM 30B - Introductory Chemistry 3 unit(s) (Students may substitute CHEM 8 for CHEM 30B)
- NUFS 100W - Writing Workshop 3 unit(s) (WID)

Complete one course:

- STAT 95 - Elementary Statistics 3 unit(s) (B4)
- PH 67 - Introductory Health Statistics 3 unit(s) (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (66 units)

Major Core (34 units)

- NUFS 8 - Nutrition for the Health Professions 3 unit(s)
- NUFS 20 - Sanitation and Environmental Issues in the Hospitality Industry 2 unit(s)
- NUFS 31 - Professionalism in Nutrition, Food Science and Packaging 1 unit(s)
- NUFS 101A - Food Science 4 unit(s)
- NUFS 103 - Food Processing and Packaging I 2 unit(s)
- NUFS 106A - Human Nutrition in the Life Span 3 unit(s)
- NUFS 106B - Research Methodology in Nutrition and Food Science 3 unit(s)
- NUFS 111 - Foodservice Production Management 3 unit(s)
- NUFS 134 - Multicultural Complementary and Alternative Medicine 3 unit(s) (S)
- NUFS 151 - Food Microbiology 2 unit(s)
- NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology 1-6 unit(s)
- PKG 107 - Principles of Packaging 3 unit(s)

Complete one course:

- NUFS 139 - Hunger and Environmental Nutrition 3 unit(s) (R)
- NUFS 144 - Food Culture: Consuming Passions 3 unit(s) (V)

Applied Nutrition and Food Sciences (32 units)

Complete 32 units from:

- CHEM 132 - Introductory Biochemistry 4 unit(s)

- CHEM 132L - Introductory Biochemistry Lab 1 *unit(s)*
- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- KIN 155 - Exercise Physiology 3 *unit(s)*
- NUFS 10 - Basic Life Skills 3 *unit(s)* (E)
- NUFS 21 - Culinary Principles and Practice 3 *unit(s)*
- NUFS 22 - Catering and Beverage Management 3 *unit(s)*
- NUFS 103L - Food Processing Laboratory 1 *unit(s)*
- NUFS 104A - Cultural Aspects of Food 3 *unit(s)*
- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*
- NUFS 108A - Nutrition and Metabolism 3 *unit(s)*
- NUFS 114A - Community Nutrition for Majors 3 *unit(s)*
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS 117 - Food Evaluation Techniques 3 *unit(s)*
- NUFS 118 - Food Chemistry 3 *unit(s)*
- NUFS 122 - Chemical Analysis of Food 3 *unit(s)*
- NUFS 123 - Nutrition for Sport 3 *unit(s)*
- NUFS 124 - Disordered Eating and Nutrition Therapy 3 *unit(s)*
- NUFS 150 - Food and Nutritional Toxicology 2 *unit(s)*
- NUFS 180 - Individual Studies 1-6 *unit(s)*
- NUFS 190 - Nutrition Education and Counseling 3 *unit(s)*
- NUFS 194 - Entrepreneurial Nutrition 1 *unit(s)*
- SPAN 1A - Elementary Spanish 4 *unit(s)* (C2) **OR** SPAN 4A - Basic Spanish I 4 *unit(s)* (or by advisement)

University Electives (3 units)

Total Units Required (120 units)

Nutritional Science, Dietetics Concentration, BS

The Department of Nutrition, Food Science and Packaging offers a Bachelor of Science in Nutritional Science with a concentration in Dietetics. This Didactic Program in Dietetics (DPD) provides students with the competencies, knowledge and skills required of the dietetics professional for practice roles of today and the future. The program helps students to develop critical thinking skills and problem-solving ability in clinical and community nutrition and food service management. The Dietetics curriculum includes support courses from the social, physical, and life sciences. Students have the option to select elective courses outside the major and/or to complete minors in business, chemistry, education, gerontology, health science, human performance, journalism, or other areas. In addition, with the appropriate coursework, students are also prepared for advanced degrees (M.S.) and post baccalaureate education (Dietetic Internships). The dietetics concentration is appropriate for students who would like to become practicing nutritionists or dietitians.

The Didactic Program in Dietetics (DPD) transmits knowledge and skills at the undergraduate level that are needed for competent dietetics practice to improve the quality of life in diverse communities. The SJSU DPD program is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics (120 South Riverside Plaza, Suite 2190, Chicago, IL 60606-6995; 800-877-1600, ext. 5400). On August 7, 2020, the program was reaccredited and received full accreditation for 8 years until December 31, 2028.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	24
Major Core Requirements	34
Concentration Requirements	27
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)

- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (24 units)

- BIOL 66 - Human Physiology 5 *unit(s)* (B2+B3)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 30B - Introductory Chemistry 3 *unit(s)* (Students may substitute CHEM 8 for CHEM 30B)

- CHEM 132 - Introductory Biochemistry 4 *unit(s)*
- CHEM 132L - Introductory Biochemistry Lab 1 *unit(s)*
- NUFS 100W - Writing Workshop 3 *unit(s)* (*WID*)

Complete one course:

- STAT 95 - Elementary Statistics 3 *unit(s)* (*B4*)
- PH 67 - Introductory Health Statistics 3 *unit(s)* (*B4*) (*UNVS 15 may be used in lieu of the statistics course required by this major.*)

Major Requirements (61 units)

Major Core (34 units)

- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 20 - Sanitation and Environmental Issues in the Hospitality Industry 2 *unit(s)*
- NUFS 31 - Professionalism in Nutrition, Food Science and Packaging 1 *unit(s)*
- NUFS 101A - Food Science 4 *unit(s)*
- NUFS 103 - Food Processing and Packaging I 2 *unit(s)*
- NUFS 106A - Human Nutrition in the Life Span 3 *unit(s)*
- NUFS 106B - Research Methodology in Nutrition and Food Science 3 *unit(s)*
- NUFS 111 - Foodservice Production Management 3 *unit(s)*
- NUFS 134 - Multicultural Complementary and Alternative Medicine 3 *unit(s)* (*S*)
- NUFS 151 - Food Microbiology 2 *unit(s)*
- NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology 1-6 *unit(s)*
- PKG 107 - Principles of Packaging 3 *unit(s)*

Complete one course:

- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (*R*)
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (*V*)

Concentration Requirements (27 units)

- NUFS 108A - Nutrition and Metabolism 3 *unit(s)*
- NUFS 109 - Advanced Nutrition 3 *unit(s)*
- NUFS 110A - Medical Nutrition Therapy 3 *unit(s)*
- NUFS 110B - Medical Nutrition Therapy 3 *unit(s)*
- NUFS 113 - Foodservice Systems: Mgmt & Proc 3 *unit(s)*
- NUFS 114A - Community Nutrition for Majors 3 *unit(s)*
- NUFS 190 - Nutrition Education and Counseling 3 *unit(s)*

Major Electives (6 units)

Complete 6 units from the following (or by advisement).

- NUFS 10 - Basic Life Skills 3 *unit(s)* (E)
- NUFS 21 - Culinary Principles and Practice 3 *unit(s)*
- NUFS 22 - Catering and Beverage Management 3 *unit(s)*
- NUFS 103L - Food Processing Laboratory 1 *unit(s)*
- NUFS 104A - Cultural Aspects of Food 3 *unit(s)*
- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS 123 - Nutrition for Sport 3 *unit(s)*
- NUFS 124 - Disordered Eating and Nutrition Therapy 3 *unit(s)*
- NUFS 180 - Individual Studies 1-6 *unit(s)*
- NUFS 194 - Entrepreneurial Nutrition 1 *unit(s)*
- SPAN 1A - Elementary Spanish (C2) **OR** SPAN 4A - Basic Spanish I 4 *unit(s)* (or by advertisement)

Total Units Required (120 units)

Nutritional Science, Food Management Concentration, BS

The concentration in Food Management under the Bachelor of Science in Nutritional Science provides students with the education and background needed to gain employment in foodservice administration. The course plan emphasizes providing a scientific foundation in introductory chemistry, bacteriology and human physiology. Support courses in psychology, statistics and economics also provide a strong background. Business courses in human resource management, accounting, and labor relations are needed to provide business skills utilized in foodservice management. Numerous courses in culinary skills, foodservice production management and procurement, catering, sanitation and food science, and cultural aspects of food, as well as nutrition, provide the industry focused education needed to function in the foodservice industry in management.

All students majoring in the Food Management concentration complete both a foodservice internship for 200 hours as well as a field experience course planned for a higher level of work responsibilities with enrollment as a senior for 90 hours. Both experiences provide the students majoring in the Food Management Concentration with the knowledge, skills, and confidence to interview for foodservice management positions. A carefully prepared multi-year program of study will ensure an appropriate sequencing of required courses and students should seek early and frequent advice from departmental advisors.

The Concentration course plan meets the Program Learning Outcomes established for the Department of Nutrition, Food Science and Packaging. The BS degree in Nutritional Science with a Concentration in Food Management is a regimented degree plan for students who wish to develop a focused set of skills to be successful in the foodservice industry so they can apply these skills in a practical setting.

- Program Learning Outcomes

Major-Specific Graduation Requirements

Students in this major must have an overall 2.5 average across the courses in the major to graduate.

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	17
Major Requirements	34

Concentration Requirements	34
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or Specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (17 units)

- BIOL 66 - Human Physiology 5 *unit(s)* (B2+B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3) (*Students may substitute CHEM 1A for CHEM 30A*)
- CHEM 30B - Introductory Chemistry 3 *unit(s)* (*Students may substitute CHEM 8 for CHEM 30B*)
- NUFS 100W - Writing Workshop 3 *unit(s)* (WID)

Complete one course:

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

- PH 67 - Introductory Health Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (68 units)

Major Core (34 units)

- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 20 - Sanitation and Environmental Issues in the Hospitality Industry 2 *unit(s)*
- NUFS 31 - Professionalism in Nutrition, Food Science and Packaging 1 *unit(s)*
- NUFS 101A - Food Science 4 *unit(s)*
- NUFS 103 - Food Processing and Packaging I 2 *unit(s)*
- NUFS 106A - Human Nutrition in the Life Span 3 *unit(s)*
- NUFS 106B - Research Methodology in Nutrition and Food Science 3 *unit(s)*
- NUFS 111 - Foodservice Production Management 3 *unit(s)*
- NUFS 134 - Multicultural Complementary and Alternative Medicine 3 *unit(s)* (S)
- NUFS 151 - Food Microbiology 2 *unit(s)*
- NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology 1-6 *unit(s)*
- PKG 107 - Principles of Packaging 3 *unit(s)*

Complete one course:

- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (V)

Food Management Concentration (23 units)

- BUS1 20N - Survey of Accounting 3 *unit(s)*
- NUFS 21 - Culinary Principles and Practice 3 *unit(s)*
- NUFS 22 - Catering and Beverage Management 3 *unit(s)*
- NUFS 25 - Internship in Foodservice Management 1-2 *unit(s)*
- NUFS 104A - Cultural Aspects of Food 3 *unit(s)*
- NUFS 113 - Foodservice Systems: Mgmt & Proc 3 *unit(s)*
- NUFS 114A - Community Nutrition for Majors 3 *unit(s)*
- NUFS 190 - Nutrition Education and Counseling 3 *unit(s)*

Major Electives (11 units)

Complete 11 units from the following (or by advisement):

- NUFS 10 - Basic Life Skills 3 *unit(s)* (E)
- NUFS 103L - Food Processing Laboratory 1 *unit(s)*
- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS 194 - Entrepreneurial Nutrition 1 *unit(s)*
- PKG 169 - Food Packaging and Preservation 3 *unit(s)*

- SPAN 1A - Elementary Spanish **OR** SPAN 4A - Basic Spanish I 4 unit(s) (or by advisement)

Total Units Required (120 units)

Packaging, BS

The Bachelor of Science in Packaging program, offered by the Department of Nutrition, Food Science and Packaging, is one of a handful of programs in the USA providing technical expertise in this multidisciplinary field. Every product manufactured from health care and beauty products to washing machines and drugs require packages to protect and sell the product. The BS degree in Packaging is a regimented degree plan for students who wish to develop a focused set of skills in pre-selected areas of packaging so they can apply these skills in a technical setting. The degree plan emphasizes industry focused scientific and methodological training, as well as breadth in pre-selected areas of engineering, graphic design, project management, advertising, and material science. Students also take support courses in chemistry, math, physics, and statistics to prepare for the major. A carefully prepared multi-year program of study will ensure an appropriate sequencing of required courses and students should seek early and frequent advice from departmental advisors.

The academic program at SJSU begins with material courses to understand the properties of glass, plastics and paper then expands to the properties and manufacturing and use of packages made from these materials. The next group of courses describe the use of packages in particular industries such as food, pharmaceuticals, medical products and healthcare and beauty. The courses include the corporate use of packages and project management in driving packaging projects in a firm to the understanding of federal regulations for heavily regulated industries like drugs and medical products.

The number of potential jobs for graduates and careers available with a background in packaging is driven by the uniqueness of the skills learned by the students but also by the fact that there are very few places to learn the skills necessary to design and develop package systems. The packaging students engage in several industry-sponsored competitions every year as well as attending at least one major trade show at little expense to themselves. These industry-focused activities along with a paid internship position enable packaging graduates to interview as knowledgeable graduates.

- Program Learning Outcomes

Major-Specific Graduation Requirements

Students in this major must have an overall 2.0 average across the courses in the major to graduate.

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	25
Major Requirements	52
University Electives	8
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (25 units)

May substitute CHEM 1A for CHEM 30A. Students can also substitute CHEM 8 for CHEM 30B.

- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- CHEM 30B - Introductory Chemistry 3 *unit(s)*
- NUFS 100W - Writing Workshop 3 *unit(s)* (WID) **OR** PH 100W - Writing Workshop 3 *unit(s)* (WID)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4)
- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (B4)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Complete one course:

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)
- PH 67 - Introductory Health Statistics 3 *unit(s)* (B4)

Major Requirements (52 units)

Core Courses (13 units)

- NUFS 9 - Introduction to Human Nutrition 3 *unit(s)* (E) **OR** NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*

- NUFS 31 - Professionalism in Nutrition, Food Science and Packaging 1 unit(s)
- NUFS 151 - Food Microbiology 2 unit(s)
- NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology 1-6 unit(s) (4 units required)
- PKG 107 - Principles of Packaging 3 unit(s)

Packaging Requirements (39 units)

- NUFS 103 - Food Processing and Packaging I 2 unit(s)
- NUFS 103L - Food Processing Laboratory 1 unit(s)
- NUFS 139 - Hunger and Environmental Nutrition 3 unit(s) (R)
- PKG 120 - Artios CAD For Packaging 3 unit(s)
- PKG 121 - Solidworks For Packaging 3 unit(s)
- PKG 141A - Packaging Materials I, Paper, Metal, and Wood Based 3 unit(s)
- PKG 141B - Packaging Materials II, Plastics, Composites, and Glass 3 unit(s)
- PKG 146 - Packaging for Medical Devices and Pharmaceuticals 3 unit(s)
- PKG 156 - Packaging Machinery Systems 3 unit(s)
- PKG 158 - Protective Package Design and Testing 3 unit(s)
- PKG 159 - Packaging Material Handling and Distribution 3 unit(s)
- PKG 160 - Hazardous Materials Packaging 3 unit(s)
- PKG 169 - Food Packaging and Preservation 3 unit(s)
- PKG 170 - Packaging Development and Management 3 unit(s)

University Electives (8 units)

Total Units Required (120 units)

Public Health, BS

Students pursuing a BS in Public Health, offered by the Department of Public Health and Recreation, will join a group of students dedicated to documenting, monitoring, assessing, and improving the health of all communities, especially those who are marginalized.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	22
Major Core Requirements	39
UD PH Electives or Minor	15
University Electives	9
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in Required for the Major Core must be completed with a grade of "C" or better to graduate. All other approved electives require a "C-" or better to graduate.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- PH 100W - Writing Workshop 3 *unit(s)* (WID)

Major Preparation (22 units)

Students in this major must earn a grade of "C" or better in each of the courses required in the Preparation for the Major.

- BIOL 21 - Human Biology 3 *unit(s)* (B2B3)
- BIOL 65 - Human Anatomy 4 *unit(s)* (B2B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1)

CHEM 1A or CHEM 1B may be used to fulfill the CHEM 30A major preparation course.

- PH 1 - Understanding Your Health 3 unit(s) (E)
- PH 15 - Human Life Span 3 unit(s) (D)
- PH 67 - Introductory Health Statistics 3 unit(s) (B4)

Any course that is currently articulated to STAT 95 may be used to fulfill the PH 67 preparation course for this major. UNVS 15 may be used in lieu of the statistics course required by this major.

- PH 99 - Introduction to Public Health 3 unit(s)

Major Requirements (54 units)

Students must complete the following **major core courses** with a grade of "C" or better to graduate.

Core Courses (39 units)

- PH 102 - Health Team Building 3 unit(s)
- PH 103 - Introduction to Health Policy 3 unit(s)
- PH 104 - Community Health Promotion 4 unit(s)
- PH 135 - Health Issues in a Multicultural Society 3 unit(s) (S)
- PH 158 - Health Communications 3 unit(s)
- PH 161 - Epidemiology 3 unit(s)
- PH 162 - Health Care Organization and Admin 3 unit(s)
- PH 165A - Public Health Leadership Series I 1 unit(s)
- PH 165B - Public Health Leadership Series II 1 unit(s)
- PH 165C - Public Health Leadership Series III Fieldwork Experience 2 unit(s)
- PH 165D - Public Health Leadership Series IV 1 unit(s)
- PH 167 - Biostatistics 3 unit(s)
- PH 172 - Contemporary Environmental Health Issues 3 unit(s) (R)
- PH 179 - Public Health Capstone 3 unit(s)

Population Health Elective - Choose one course from the following:

- PH 145 - Community Mental Health 3 unit(s) or
- PH 176 - Introduction to Global Health 3 unit(s)

Upper Division Public Health Electives or Minor (15 units)

Students must complete 15 units of upper division public health elective coursework from the approved list of courses or complete a minor.

- PH 145 - Community Mental Health 3 unit(s)
- PH 164 - Health Social Marketing 3 unit(s)
- PH 168 - Theoretical Foundations in Community Health Education 3 unit(s)
- PH 176 - Introduction to Global Health 3 unit(s)
- PH 183 - Special Topics in Community Health Education 3 unit(s)
- PH 188 - Community Health Assessment 3 unit(s)
- PH 191 - Applied Epidemiology 3 unit(s)
- PH 193 - Special Topics in Population Data Science 3 unit(s)
- PH 195 - Fundamentals of Data Management and Presentation 3 unit(s)
- PH 197 - Quantitative Analysis 3 unit(s)

- PH 198 - Qualitative Methods 3 *unit(s)*
- RECL 152 - Non-Profit Leadership & Management 3 *unit(s)*

University Electives (9 units)

- RECL 10 - Creating a Meaningful Life (*E*) is recommended.

Additional courses selected in consultation with major advisor.

Total Units Required (120 units)

Public Health, BS (SJSU Online)

Fully Online Degree Completion Program

Students pursuing a BS in Public Health, offered by the Department of Public Health and Recreation, will join a group of students dedicated to documenting, monitoring, assessing, and improving the health of all communities, especially those who are marginalized.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes are delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Graduation Requirements	6
Major Requirements	54
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units), including all four CSU-approved Basics Skills courses, each with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)

- Completion of at least 22 units of the following courses (or equivalents):
 - BIOL 21 - Human Biology 3 *unit(s)* (B2+B3)
 - BIOL 65 - Human Anatomy 4 *unit(s)* (B2+B3)
 - CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
 - PH 1 - Understanding Your Health 3 *unit(s)* (E)
 - PH 15 - Human Life Span 3 *unit(s)* (D)
 - PH 67 - Introductory Health Statistics 3 *unit(s)* (B4) (or equivalent statistics course)
 - PH 99 - Introduction to Public Health 3 *unit(s)*

University Requirements (6 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

This requirement is fulfilled in this major with:

- PH 100W - Writing Workshop 3 *unit(s)* (WID)

Major Requirements (54 units)

Students must complete the following the major core courses with a grade of "C" or better to graduate.

Core Courses (39 units)

- PH 102 - Health Team Building 3 *unit(s)*
- PH 103 - Introduction to Health Policy 3 *unit(s)*
- PH 104 - Community Health Promotion 4 *unit(s)*
- PH 135 - Health Issues in a Multicultural Society 3 *unit(s)* (S)
- PH 158 - Health Communications 3 *unit(s)*
- PH 161 - Epidemiology 3 *unit(s)*
- PH 162 - Health Care Organization and Admin 3 *unit(s)*
- PH 165A - Public Health Leadership Series I 1 *unit(s)*
- PH 165B - Public Health Leadership Series II 1 *unit(s)*
- PH 165C - Public Health Leadership Series III Fieldwork Experience 2 *unit(s)*
- PH 165D - Public Health Leadership Series IV 1 *unit(s)*
- PH 167 - Biostatistics 3 *unit(s)*
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)
- PH 179 - Public Health Capstone 3 *unit(s)*

Population Health Elective - Choose one course from the following:

- PH 145 - Community Mental Health 3 *unit(s)*
- PH 176 - Introduction to Global Health 3 *unit(s)*

Upper Division Public Health Electives or Minor (15 units)

Students must complete 15 units of upper division public health elective coursework from the approved list of courses or complete a minor.

- PH 145 - Community Mental Health 3 *unit(s)*
- PH 164 - Health Social Marketing 3 *unit(s)*
- PH 168 - Theoretical Foundations in Community Health Education 3 *unit(s)*
- PH 176 - Introduction to Global Health 3 *unit(s)*
- PH 183 - Special Topics in Community Health Education 3 *unit(s)*
- PH 188 - Community Health Assessment 3 *unit(s)*
- PH 191 - Applied Epidemiology 3 *unit(s)*
- PH 193 - Special Topics in Population Data Science 3 *unit(s)*
- PH 195 - Fundamentals of Data Management and Presentation 3 *unit(s)*
- PH 197 - Quantitative Analysis 3 *unit(s)*
- PH 198 - Qualitative Methods 3 *unit(s)*
- RECL 152 - Non-Profit Leadership & Management 3 *unit(s)*

Total Units Required (120 units)

Public Health, Concentration in Community Health Education, BS

Students pursuing a BS in Public Health, offered by the Department of Public Health and Recreation, will join a group of students dedicated to documenting, monitoring, assessing, and improving the health of all communities, especially those who are marginalized.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	22
Major Core Requirements	36
Concentration Requirements	18
University Electives	9
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in Required for the Major Core must be completed with a grade of "C" or better to graduate. All other approved electives require a "C-" or better to graduate.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- PH 100W - Writing Workshop 3 unit(s) (WID)

Major Preparation (22 units)

Students in this major must earn a grade of "C" or better in each of the courses required in the Preparation for the Major.

- BIOL 21 - Human Biology 3 unit(s) (B2B3)
- BIOL 65 - Human Anatomy 4 unit(s) (B2B3)
- CHEM 30A - Introductory Chemistry 3 unit(s) (B1)
CHEM 1A or CHEM 1B may be used to fulfill the CHEM 30A major preparation course.
- PH 1 - Understanding Your Health 3 unit(s) (E)
- PH 15 - Human Life Span 3 unit(s) (D)
- PH 67 - Introductory Health Statistics 3 unit(s) (B4)
Any course that is currently articulated to STAT 95 may be used to fulfill the PH 67 preparation course for this major. UNVS 15 may be used in lieu of the statistics course required by this major.
- PH 99 - Introduction to Public Health 3 unit(s)

Major Requirements (54 units)

Students must complete the following **major core** and **concentration** courses with a grade of "C" or better to graduate.

Core Courses (36 units)

- PH 102 - Health Team Building 3 unit(s)
- PH 103 - Introduction to Health Policy 3 unit(s)
- PH 104 - Community Health Promotion 4 unit(s)
- PH 135 - Health Issues in a Multicultural Society 3 unit(s) (S)
- PH 158 - Health Communications 3 unit(s)
- PH 161 - Epidemiology 3 unit(s)
- PH 162 - Health Care Organization and Admin 3 unit(s)
- PH 165A - Public Health Leadership Series I 1 unit(s)
- PH 165B - Public Health Leadership Series II 1 unit(s)
- PH 165C - Public Health Leadership Series III Fieldwork Experience 2 unit(s)
- PH 165D - Public Health Leadership Series IV 1 unit(s)
- PH 167 - Biostatistics 3 unit(s)
- PH 172 - Contemporary Environmental Health Issues 3 unit(s) (R)

Population Health Elective - Complete the following:

- PH 176 - Introduction to Global Health 3 *unit(s)*

Concentration Courses (18 units)

- PH 145 - Community Mental Health 3 *unit(s)*
- PH 164 - Health Social Marketing 3 *unit(s)*
- PH 168 - Theoretical Foundations in Community Health Education 3 *unit(s)*
- PH 183 - Special Topics in Community Health Education 3 *unit(s)*
- PH 188 - Community Health Assessment 3 *unit(s)*
- PH 189 - Community Health Education Capstone 3 *unit(s)*

University Electives (9 units)

- RECL 10 - Creating a Meaningful Life (E) is recommended.

Additional courses selected in consultation with major advisor.

Total Units Required (120 units)

Public Health, Concentration in Population Data Science, BS

Students pursuing a BS in Public Health, offered by the Department of Public Health and Recreation, will join a group of students dedicated to documenting, monitoring, assessing, and improving the health of all communities, especially those who are marginalized.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	22
Major Core Requirements	36
Concentration Requirements	18
University Electives	9
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in Required for the Major Core must be completed with a grade of "C" or better to graduate. All other approved electives require a "C-" or better to graduate.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

This requirement is fulfilled in this major with:

- PH 100W - Writing Workshop 3 *unit(s)* (WID)

Major Preparation (22 units)

Students in this major must earn a grade of "C" or better in each of the courses required in the Preparation for the Major.

- BIOL 21 - Human Biology 3 *unit(s)* (B2B3)
- BIOL 65 - Human Anatomy 4 *unit(s)* (B2B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1)
CHEM 1A and CHEM 1B may be used to fulfill the CHEM 30A major preparation course.
- PH 1 - Understanding Your Health 3 *unit(s)* (E)
- PH 15 - Human Life Span 3 *unit(s)* (D)
- PH 67 - Introductory Health Statistics 3 *unit(s)* (B4)
Any course that is currently articulated to STAT 95 may be used to fulfill the PH 67 preparation course for this major. UNVS 15 may be used in lieu of the statistics course required by this major.
- PH 99 - Introduction to Public Health 3 *unit(s)*

Major Requirements (54 units)

Students must complete the following **major core** and **concentration** courses with a grade of "C" or better to graduate.

Core Courses (36 units)

- PH 102 - Health Team Building 3 *unit(s)*
- PH 103 - Introduction to Health Policy 3 *unit(s)*
- PH 104 - Community Health Promotion 4 *unit(s)*
- PH 135 - Health Issues in a Multicultural Society 3 *unit(s)* (S)
- PH 158 - Health Communications 3 *unit(s)*
- PH 161 - Epidemiology 3 *unit(s)*
- PH 162 - Health Care Organization and Admin 3 *unit(s)*
- PH 165A - Public Health Leadership Series I 1 *unit(s)*
- PH 165B - Public Health Leadership Series II 1 *unit(s)*
- PH 165C - Public Health Leadership Series III Fieldwork Experience 2 *unit(s)*
- PH 165D - Public Health Leadership Series IV 1 *unit(s)*
- PH 167 - Biostatistics 3 *unit(s)*
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)

Population Health Elective - Choose one course from the following:

- PH 176 - Introduction to Global Health 3 *unit(s)*
- PH 145 - Community Mental Health 3 *unit(s)*

Concentration Courses (18 units)

- PH 191 - Applied Epidemiology 3 *unit(s)*
- PH 193 - Special Topics in Population Data Science 3 *unit(s)*
- PH 195 - Fundamentals of Data Management and Presentation 3 *unit(s)*
- PH 197 - Quantitative Analysis 3 *unit(s)*
- PH 198 - Qualitative Methods 3 *unit(s)*
- PH 199 - Population Data Science Capstone 3 *unit(s)*

University Electives (9 units)

- RECL 10 - Creating a Meaningful Life (E) is recommended.

Additional courses selected in consultation with major advisor.

Total Units Required (120 units)

Recreation, BS

The Recreation degree program, founded in 1947 by the Department of Public Health and Recreation, has a core accredited by the Council on Accreditation of Park, Recreation, and Tourism Related Professions (COAPRT). The degree has maintained continuous accreditation since its first awarding of this status occurred in April 1987,

demonstrating the rigor and recognition of our programs. The Bachelor's degree in Recreation is a nationally accredited program comprised of a core set of classes and courses split generally between concentration courses and major electives. Graduates completing one of these concentrations are eligible to apply for national and state certification. While the general recreation degree is the most flexible in terms of choosing related electives, students may instead elect to complete a more specialized course of study in one of our two approved concentrations within the B.S. Recreation Degree: Recreation Management and Recreation Therapy. We also offer an M.S. in Recreation, which is designed to meet increasing needs and demands for recreation professionals and administrators in our growing fields of practices in public, non-profit, and commercial sectors, not only locally and regionally, but also nationally and globally.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	50
Major Preparation	6
Major Requirements	64
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (6 units)

- RECL 100W - Writing Workshop 3 *unit(s)* (*WID*)

Complete One From:

- PH 15 - Human Life Span 3 *unit(s)*
- PH 99 - Introduction to Public Health 3 *unit(s)*

Major Requirements (64 units)

Core Courses (32 units)

- RECL 90 - Foundations of Recreation Parks & Tourism 3 *unit(s)*
- RECL 110 - Leisure, Life and Contemporary Society 3 *unit(s)*
- RECL 112 - Foundations of Recreation Therapy 3 *unit(s)*
- RECL 132 - Recreation Program Planning 3 *unit(s)*
- RECL 135 - Planning and Managing Rec Areas & Facil 3 *unit(s)*
- RECL 136 - Principles of Recreation and Park Admin 3 *unit(s)*
- RECL 160 - Evaluation and Research in Recreation 3 *unit(s)*
- RECL 170A - Pre-Intern Workshop 1 *unit(s)*

Internship (10 units)

Complete one course:

- RECL 170B - Internship in Recreation 10 *unit(s)*
- RECL 170C - Internship in Recreation Therapy 10 *unit(s)*

Major Electives (29-32 units)

- Electives in consultation with Academic Advisor 29-32 *unit(s)* (*up to 9 can be taken outside of Recreation - all must be approved by advisor*)

Total Units Required (120 units)

Recreation, Recreation Management Concentration, BS

The recreation degree program, founded in 1947 by the Department of Public Health and Recreation, has a core accredited by the Council on Accreditation of Park, Recreation, and Tourism Related Professions (COAPRT). The degree has maintained continuous accreditation since its first awarding of this status occurred in April 1987, demonstrating the rigor and recognition of our programs. The Bachelor's degree in Recreation is a nationally

accredited program comprised of a core set of classes and courses split generally between concentration courses and major electives. Graduates completing one of these concentrations are eligible to apply for national and state certification. While the general recreation degree is the most flexible in terms of choosing related electives, students may instead elect to complete a more specialized course of study in one of our two approved concentrations within the B.S. Recreation Degree: Recreation Management and Recreation Therapy. We also offer an M.S. in Recreation, which is designed to meet increasing needs and demands for recreation professionals and administrators in our growing fields of practices in public, non-profit, and commercial sectors, not only locally and regionally, but also nationally and globally.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	50
Major Preparation	6
Major Core Requirements	46-52
Concentration Requirements	15
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (6 units)

- RECL 100W - Writing Workshop 3 *unit(s)* (*WID*)

Complete One From:

- PH 15 - Human Life Span 3 *unit(s)*
- PH 99 - Introduction to Public Health 3 *unit(s)*

Major Requirements (64 units)

Core Courses (32 units)

- RECL 90 - Foundations of Recreation Parks & Tourism 3 *unit(s)*
- RECL 110 - Leisure, Life and Contemporary Society 3 *unit(s)*
- RECL 112 - Foundations of Recreation Therapy 3 *unit(s)*
- RECL 132 - Recreation Program Planning 3 *unit(s)*
- RECL 135 - Planning and Managing Rec Areas & Facil 3 *unit(s)*
- RECL 136 - Principles of Recreation and Park Admin 3 *unit(s)*
- RECL 160 - Evaluation and Research in Recreation 3 *unit(s)*
- RECL 170A - Pre-Intern Workshop 1 *unit(s)*

Internship (10 units)

Complete one course:

- RECL 170B - Internship in Recreation 10 *unit(s)*
- RECL 170C - Internship in Recreation Therapy 10 *unit(s)*

Recreation Management Concentration (15 units)

- RECL 97 - Event Planning 3 *unit(s)*
- RECL 150 - For-Profit Enterprises in Recreation 3 *unit(s)*
- RECL 152 - Non-Profit Leadership & Management 3 *unit(s)*
- RECL 155 - Outdoor Recreation Systems 3 *unit(s)*
- RECL 157 - Sustainable Recreation & Ecotourism 3 *unit(s)*

Major Electives (14-17 units)

14-17 units of electives in consultation with academic advisor

up to 5 can be taken outside of Recreation - all must be approved by advisor

Total Units Required (120 units)

Recreation, Recreation Therapy Concentration, BS

Major Advisor: Susan Ross

The recreation degree program, founded in 1947 by the Department of Public Health and Recreation, has a core accredited by the Council on Accreditation of Park, Recreation, and Tourism Related Professions (COAPRT). The degree has maintained continuous accreditation since its first awarding of this status occurred in April 1987, demonstrating the rigor and recognition of our programs. The Bachelor's degree in Recreation is a nationally accredited program comprised of a core set of classes and courses split generally between concentration courses and major electives. Graduates completing one of these concentrations are eligible to apply for national and state certification. While the general recreation degree is the most flexible in terms of choosing related electives, students may instead elect to complete a more specialized course of study in one of our two approved concentrations within the B.S. Recreation Degree: Recreation Management and Recreation Therapy. We also offer MS in Recreation, all of which are designed to meet increasing needs and demands for recreation professionals and administrators in our growing fields of practices in public, non-profit, and commercial sectors, not only locally and regionally, but also nationally and globally.

Recreation therapy is a systematic process of treatment services that utilize recreation and other activity-based interventions to address the assessed needs of individuals with illnesses and/or disabling conditions, as a means to improve psychological and physical health, recovery, and well-being. Graduates of recreation therapy work in a wide range of health services settings (i.e. veterans administration, mental health, addictions, physical medicine, rehabilitation, prison/corrections, pediatrics, municipal park and recreation, hospice, skilled nursing, adventure/therapeutic camps, and private practice).

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	47
Major Preparation	16
Major Core Requirements	32
Concentration Requirements	22
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions,

Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (16 units)

- RECL 100W - Writing Workshop 3 *unit(s)* (WID)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- PSYC 110 - Adult Psychopathology 3 *unit(s)*

Complete One Course From:

- PH 15 - Human Life Span 3 *unit(s)* (D)
- PH 99 - Introduction to Public Health 3 *unit(s)*

Human Anatomy (4 units)

Complete one course:

- BIOL 65 - Human Anatomy 4 *unit(s)* (B2B3)
- BIOL 65O - Human Anatomy 4 *unit(s)* (B2B3)

Major Requirements (54 units)

Core Courses (32 units)

- RECL 90 - Foundations of Recreation Parks & Tourism 3 *unit(s)*
- RECL 110 - Leisure, Life and Contemporary Society 3 *unit(s)*
- RECL 112 - Foundations of Recreation Therapy 3 *unit(s)*
- RECL 132 - Recreation Program Planning 3 *unit(s)*
- RECL 135 - Planning and Managing Rec Areas & Facil 3 *unit(s)*

- RECL 136 - Principles of Recreation and Park Admin 3 *unit(s)*
- RECL 160 - Evaluation and Research in Recreation 3 *unit(s)*
- RECL 170A - Pre-Intern Workshop 1 *unit(s)*

Internship (10 units)

Complete one course:

- RECL 170B - Internship in Recreation 10 *unit(s)*
- RECL 170C - Internship in Recreation Therapy 10 *unit(s)*

Recreation Therapy Concentration (22 units)

- RECL 140A - Spec Interventions in RT:Aquatic Therapy 1 *unit(s)*
- RECL 140B - Spec Inter in RT: Behavior Interventions 1 *unit(s)*
- RECL 140C - Spec Inter in RT: Adventure Tx 1 *unit(s)*
- RECL 148 - Biofeedback Principles and Practices 3 *unit(s)*
- RECL 169 - Practicum in Recreation Therapy 1 *unit(s)*
- RECL 187 - Leisure Education in Recreation Therapy 3 *unit(s)*
- RECL 193 - RT Interventions for People with Physical Conditions 3 *unit(s)*
- RECL 197 - Recreation Therapy in Mental Health 3 *unit(s)*
- RECL 198 - Rec Therapy Assessment and Documentation 3 *unit(s)*
- RECL 199 - Advanced Practices in Recreation Therapy 3 *unit(s)*

University Electives (3 units)

Additional courses selected in consultation with major advisor

Total Units Required (120 units)

Social Work, BA

The BASW program, which is offered by the School of Social Work and has been fully accredited by the Council on Social Work Education since 1976, educates generalist social work practitioners with a liberal arts foundation for practice from a transcultural perspective with individuals, families, and groups within organizations and in the context of broader communities in which they are embedded. To develop the necessary professional generalist skills in their work with individuals, families, groups, communities, and organizations, the BASW program curriculum and field practicum experiences provide students with learning opportunities to develop: 1) a selected body of knowledge about social institutions, and methods of problem-solving in social relationships; 2) the skills for integrating knowledge, thought, and feeling into an effective and efficient program of doing; and, 3) a personal and professional value system which incorporates a growing self-awareness necessary for the sensitive and disciplined use of self in helping roles.

In addition to the core social work curriculum, which includes human behavior in the social environment, social policy and programs, practice, social research, and field education, electives are offered to expand a student's interest in the areas of social work with families; social services to children and youth; alcoholism and substance abuse and the family.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	50
Major Preparation	3
Major Requirements	38
University Electives	29
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Requirements of the Major

All students must complete SCWK 110, SCWK 120, and SCWK 130 with a passing grade of "C" or better and receive a grade of "Credit" in SCWK 140 before moving forward to other advanced Social Work courses (SCWK 111, SCWK 112, SCWK 175) or to the field education program (SCWK 141, SCWK 142).

Major-Specific Graduation Requirements

The following courses Required in the Major must be completed with a grade of "C or better": SCWK 110, SCWK 111, SCWK 112, SCWK 120, SCWK 130, and SCWK 175. The following courses must be completed with "Credit": SCWK 140, SCWK 141 and SCWK 142.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (3 units)

- STAT 95 - Elementary Statistics 3 unit(s) (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (38 units)

- SCWK 110 - Foundations of Social Work Practice 3 unit(s)
- SCWK 111 - Generalist Social Work Practice I 3 unit(s)
- SCWK 112 - Generalist Practice II 3 unit(s)
- SCWK 120 - Social Welfare Institutions and Policies I 3 unit(s)
- SCWK 121 - Social Welfare Institutions and Policies II 3 unit(s)
- SCWK 130 - Human Behavior in the Social Environment I 3 unit(s)
- SCWK 131 - Human Behavior in the Social Environment II 3 unit(s)
- SCWK 140 - Introduction to Field Practicum 3 unit(s)
- SCWK 141 - Field Practicum I 2-5 unit(s) (4 units required)
- SCWK 142 - Field Practicum II 2-5 unit(s) (4 units required)
- SCWK 170 - Introduction to Research Methods 3 unit(s)
- SCWK 175 - Social Work Senior Seminar 3 unit(s)

University Electives (29 units)

Total Units Required (120 units)

Undergraduate Minor(s)

Aerospace Studies Minor

The Minor in Aerospace Studies is offered by the Department of Aerospace Studies (Air Force ROTC). The Air Force ROTC program is designed to provide instruction in leadership, management, and national security studies along with military education and training. This program prepares the cadet for assignment to positions of responsibility and importance in the Air Force and the opportunity to obtain an officer's commission in the United States Air and Space Forces.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University

Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (16 units)

- AS 1A - Heritage and Values *1 unit(s)*
- AS 1B - Heritage and Values *1 unit(s)*
- AS 2A - Team Leadership Fundamentals *1 unit(s)*
- AS 2B - Team Leadership Fundamentals *1 unit(s)*
- AS 131A - Leading People and Effective Communication *3 unit(s)*
- AS 131B - Leading People and Effective Communication *3 unit(s)*
- AS 141A - National Security, Leadership & Commissioning Prep *3 unit(s)*
- AS 141B - National Security, Leadership & Commissioning Prep *3 unit(s)*

Total Units Required (16 units)

Complementary and Alternative Health Practices Minor

Minor Advisor: Susan Ross

The Complementary and Alternative Health Practices Minor program, offered by the Department of Public Health and Recreation, is designed to provide a strong academic understanding of the theory, practice, and effectiveness of complementary and alternative medical (CAM) therapies. Emphasis is on critical thinking skills and using a scientific evidence-based eye while keeping an open mind. Classes will form the basis for evaluating CAM therapies commonly practiced by U.S. residents.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (13-15 units)

Required Courses (9 units)

- NUFS 134 - Multicultural Complementary and Alternative Medicine *3 unit(s) (S)*
- NUFS 135 - Health Issues in a Multicultural Society *3 unit(s) (S)*

Complete One Course From:

- BIOL 54 - Human Understanding *3 unit(s) (E)*
- PHIL 111 - Medical Ethics *3 unit(s)*
- ANTH 108 - Medical Anthropology *3 unit(s)*

Electives (4-6 units)

Choose courses from two different areas. HPRF 180 - Individual Studies, may be used for any area depending upon topic studied.

Alternative Medical Systems

- ANTH 108 - Medical Anthropology 3 *unit(s)*
- PHIL 111 - Medical Ethics 3 *unit(s)*

Mind/Body Interventions

- KIN 69 - Stress Management: A Multidisciplinary Perspective 3 *unit(s)* (E)
- RELS 122 - Magic, Science and Religion 3 *unit(s)* (V)
- RECL 197 - Recreation Therapy in Mental Health 3 *unit(s)*

Biological-Based Therapies

- BIOL 54 - Human Understanding 3 *unit(s)* (E)
- NUFS 104A - Cultural Aspects of Food 3 *unit(s)*
- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*

Manipulative and Body-Based Methods

- KIN 50 - Tai Chi (Non-Combative) 1 *unit(s)* (PE)
- KIN 61A - Beginning Hatha Yoga 1 *unit(s)* (PE)

Total Units Required (13-15 units)

Note: HPRF 180 may be used for any area depending on topic studied.

Health Professions Minor

A Minor in Health Professions, offered by the Department of Public Health and Recreation, provides all students with the opportunity to gain a breadth of knowledge and understanding of the challenging health issues facing a multicultural society. Courses must be unique to the minor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12-15 units)

Required Courses (3 units)

- PH 135 - Health Issues in a Multicultural Society 3 *unit(s)* (S)

Electives (9-13 units)

Choose Courses from Four of the Following Five Areas.

Gerontology

- GERO 108 - Health in Later Life 3 *unit(s)*

Public Health

- PH 102 - Health Team Building 3 *unit(s)*
- PH 161 - Epidemiology 3 *unit(s)*
- PH 162 - Health Care Organization and Admin 3 *unit(s)*

Nursing

- NURS 180 - Individual Studies 1-4 *unit(s)* (Or other courses with Director of Health Professions Approval)

Nutrition, Food Science and Packaging

- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 9 - Introduction to Human Nutrition 3 *unit(s)* (E)
- NUFS 106A - Human Nutrition in the Life Span 3 *unit(s)*
- NUFS 116 - Aging and Nutrition 3 *unit(s)* (Or other courses with Director of Health Professions Approval)

Other Health-Related Areas

- KIN 69 - Stress Management: A Multidisciplinary Perspective 3 *unit(s)* (E)
- KIN 155 - Exercise Physiology 3 *unit(s)*
- KIN 156 - Introduction to Adapted Physical Activity 3 *unit(s)*
- PH 169 - Diversity, Stress and Health 3 *unit(s)* (S)
- KIN 188 - Prevention and Care of Athletic Injuries 2 *unit(s)*
- RECL 110 - Leisure, Life and Contemporary Society 3 *unit(s)*
- RECL 112 - Foundations of Recreation Therapy 3 *unit(s)*
- RECL 185 - Leisure, Recreation and Aging 3 *unit(s)*
- RECL 198 - Rec Therapy Assessment and Documentation 3 *unit(s)* (Or other courses with Director of Health Professions Approval)

Total Units Required (12-15 units)

Or other courses with Director of Health Science Approval.

Kinesiology Minor

Through advisement, students can develop the electives that help to focus their minor program of study. Contact the Department of Kinesiology for academic advisement.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- KIN 70 - Introduction to Kinesiology 3 *unit(s)*
- Three activity courses from three different movement areas approved by the advisor; these courses are in addition to the two unit university graduation requirement 3 *unit(s)*
- Kinesiology upper division electives 6 *unit(s)*

Complete One Course From:

- KIN 160 - History of Sport and Physical Education 3 *unit(s)*
- KIN 161 - Philosophical Perspectives of Sport 3 *unit(s)*
- KIN 164 - Sociocultural Perspectives 3 *unit(s)*
- KIN 167 - Sports Psychology 3 *unit(s)*
- KIN 168 - Psychology of Coaching 3 *unit(s)*

Complete One Course From:

- KIN 155 - Exercise Physiology 3 *unit(s)*
- KIN 158 - Biomechanics 3 *unit(s)*
- KIN 165 - Motor Development 3 *unit(s)*
- KIN 166 - Motor Learning 3 *unit(s)*

Total Units Required (18 units)

Military Science Minor

The Military Science Minor is offered by the Department of Military Science (Army ROTC). The Military Science Minor Form is required to declare Military Science Minor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the

coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (16 or 24 units)

Select Plan A (24 units) or Plan B (16 units).

Plan A (24 units)

These courses are Without military obligation or basic camp.

- MILS 1A - Leadership & Personal Development 2 *unit(s)*
- MILS 1B - Introduction to Tactical Leadership 2 *unit(s)*
- MILS 2A - Innovative Team Leadership 2 *unit(s)*
- MILS 2B - Foundations of Tactical Leadership 2 *unit(s)*
- MILS 130A - Adaptive Team Leadership 4 *unit(s)*
- MILS 130B - Applied Team Leadership 4 *unit(s)*
- MILS 140A - Adaptive Leadership 4 *unit(s)*
- MILS 140B - Leadership in a Complex World 4 *unit(s)*

Plan B (16 units)

With military service or basic camp.

- MILS 130A - Adaptive Team Leadership 4 *unit(s)*
- MILS 130B - Applied Team Leadership 4 *unit(s)*
- MILS 140A - Adaptive Leadership 4 *unit(s)*
- MILS 140B - Leadership in a Complex World 4 *unit(s)*

Total Units Required (16 or 24 units)

Nutrition and Food Science Minor

The Minor in Nutrition and Food Science is offered by the Department of Nutrition, Food Science and Packaging. Students wanting to broaden their understanding of food science, nutrition, environmental, cultural and health implications of food should consider this minor. The Nutrition and Food Science minor is a flexible bundle of courses designed by the student to complement their chosen major area of study. Courses used to complete this minor may also be used to complete general education requirements.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Required Courses (9 units)

- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*

Complete One Course From:

- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 9 - Introduction to Human Nutrition 3 *unit(s)* (E)

Complete One Course From:

- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (V)

Additional Courses (6 units)

Complete six units from:

- NUFS 1A - Physical Science of Food 3 *unit(s)* (B1)
- NUFS 20 - Sanitation and Environmental Issues in the Hospitality Industry 2 *unit(s)*
- NUFS 22 - Catering and Beverage Management 3 *unit(s)*
- NUFS 104A - Cultural Aspects of Food 3 *unit(s)*
- NUFS 106A - Human Nutrition in the Life Span 3 *unit(s)*
- NUFS 114B - Community Nutrition (non-majors) 3 *unit(s)*
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS 123 - Nutrition for Sport 3 *unit(s)*
- NUFS 124 - Disordered Eating and Nutrition Therapy 3 *unit(s)*
- NUFS 134 - Multicultural Complementary and Alternative Medicine 3 *unit(s)* (S)
- NUFS 194 - Entrepreneurial Nutrition 1 *unit(s)*
- PKG 107 - Principles of Packaging 3 *unit(s)*

Total Units Required (15 units)

Nutrition for Physical Performance Minor

The Minor in Nutritional for Physical Performance is offered by the Department of Nutrition, Food Science and Packaging. This minor is for students interested in better understanding the interrelationship of nutrition and physical activity. Coursework is drawn from both the Nutrition, Food Science and Packaging and Kinesiology Department course offerings. Courses used to complete this minor may also be used to complete general education requirements.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*
- NUFS 106A - Human Nutrition in the Life Span 3 *unit(s)*
- NUFS 123 - Nutrition for Sport 3 *unit(s)*
- KIN 162 - Advanced Fitness Assessment and Exercise Prescription 3 *unit(s)*

Total Units Required (15 units)

If KIN 162 is required by the major, select another nutrition course with approval of the advisor.

Packaging Minor

The Minor in Packaging is offered by the Department of Nutrition, Food Science and Packaging. Students wanting to broaden their understanding of the packaging industry should consider this minor. The packaging program complements the disciplines of engineering, design, graphic design, project management, advertising, and material science. The Packaging minor is a flexible bundle of courses designed by the student to complement their chosen major area of study. Courses used to complete this minor may also be used to complete general education requirements.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Required Courses (9 units)

- PKG 107 - Principles of Packaging 3 *unit(s)*
- PKG 141A - Packaging Materials I, Paper, Metal, and Wood Based 3 *unit(s)*
- PKG 141B - Packaging Materials II, Plastics, Composites, and Glass 3 *unit(s)*

Approved Electives (6 units)

Complete six units from:

- PKG 146 - Packaging for Medical Devices and Pharmaceuticals 3 *unit(s)*
- PKG 156 - Packaging Machinery Systems 3 *unit(s)*
- PKG 158 - Protective Package Design and Testing 3 *unit(s)*
- PKG 159 - Packaging Material Handling and Distribution 3 *unit(s)*
- PKG 169 - Food Packaging and Preservation 3 *unit(s)*
- PKG 170 - Packaging Development and Management 3 *unit(s)*

Total Units Required (15 units)

Public Health Minor

The Minor in Public Health, offered by the Department of Public Health and Recreation, introduces students to public health through foundational courses. Students gain both a broad understanding of relevant career pathways and hands-on skills that can be applied in practice. Courses reflect the interdisciplinary and complementary nature of public health concepts and practices.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Required GE Foundation (3 units)

Choose one of the following:

- PH 1 - Understanding Your Health 3 *unit(s)* (E)
- PH 15 - Human Life Span 3 *unit(s)* (D)

Required PH Core (6 units)

- PH 99 - Introduction to Public Health 3 *unit(s)*
- PH 161 - Epidemiology 3 *unit(s)*

Required PH Policy or Administration (3 units)

Choose one of the following:

- PH 103 - Introduction to Health Policy 3 *unit(s)*
- PH 162 - Health Care Organization and Admin 3 *unit(s)*

Upper Division Public Health Elective (3 units)

Choose one of the following:

- PH 135 - Health Issues in a Multicultural Society 3 *unit(s)* (S)
- PH 145 - Community Mental Health 3 *unit(s)*
- PH 158 - Health Communications 3 *unit(s)*
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)
- PH 176 - Introduction to Global Health 3 *unit(s)*
- PH 183 - Special Topics in Community Health Education 3 *unit(s)*

- PH 193 - Special Topics in Population Data Science 3 *unit(s)*
- PH 195 - Fundamentals of Data Management and Presentation 3 *unit(s)*

Total Units Required (15 units)

Recreation and Nature Minor

This multidisciplinary minor, offered by the Department of Public Health and Recreation, covers topics including conceptual foundations of play, recreation and leisure; understanding structures and processes of living systems; managing outdoor recreation behavior; human activity impacts on living systems; and design and implementation of interpretive programs. Students will learn how to balance recreation needs with protecting and enhancing the natural environment. This is an ideal minor for students who are passionate about promoting and protecting outdoor recreational spaces and nature.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (20 units)

Core Courses (20 units)

- ENVS 10 - Life on a Changing Planet 3 *unit(s)* (B2)
- RECL 90 - Foundations of Recreation Parks & Tourism 3 *unit(s)*

Complete Two Courses From:

- ENVS 144 - California Wetland Controversies 4 *unit(s)*
- ENVS 161 - California Wildlands 4 *unit(s)*
- ENVS 173 - Forest Ecology and Conservation 4 *unit(s)*
- ENVS 187 - Environmental Restoration 4 *unit(s)*
- ENVS 189 - Coastal Field Studies 4 *unit(s)*
- ENVS 191 - Advanced Environmental Restoration 4 *unit(s)*

Complete Two Courses From:

- RECL 136 - Principles of Recreation and Park Admin 3 *unit(s)*
- RECL 144 - Natural and Cultural Resource Interpretation in Recreation and Parks 3 *unit(s)*
- RECL 155 - Outdoor Recreation Systems 3 *unit(s)*
- RECL 157 - Sustainable Recreation & Ecotourism 3 *unit(s)*

Total Units Required (20 units)

Recreation Minor

The recreation degree program, founded in 1947 by the Department of Public Health and Recreation, has a core accredited by the Council on Accreditation of Park, Recreation, and Tourism Related Professions (COAPRT). The degree has maintained continuous accreditation since its first awarding of this status occurred in April 1987, demonstrating the rigor and recognition of our programs. The Bachelor's degree in Recreation is a nationally accredited program comprised of a core set of classes and courses split generally between concentration courses and major electives. Graduates completing one of these concentrations are eligible to apply for national and state certification. While the general recreation degree is the most flexible in terms of choosing related electives, students may instead elect to complete a more specialized course of study in one of our two approved concentrations within the Recreation, BS Degree: Recreation Management and Recreation Therapy. We also offer Recreation, MS (Not Accepting Students), all of which are designed to meet increasing needs and demands for recreation professionals and administrators in our growing fields of practice in public, non-profit, and commercial sectors, not only locally and regionally, but also nationally and globally.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Required Core (6 units)

- RECL 90 - Foundations of Recreation Parks & Tourism 3 *unit(s)*
- RECL 97 - Event Planning 3 *unit(s)*

Upper Division Requirements (9 units)

Complete nine (9) upper division units in consultation with department advisor

Total Units Required (15 units)

Social Work Minor

The Minor in Social Work, offered by the School of Social Work, consists of 18 units and is designed to enrich the student's major area of study by providing an understanding of the values and structures of current human service programs within a historical and developmental framework. Admission into the minor program is based on the availability of space.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- SCWK 10 - Introduction to Social Welfare and Social Work 3 *unit(s)*
- SCWK 110 - Foundations of Social Work Practice 3 *unit(s)*
- SCWK 120 - Social Welfare Institutions and Policies I 3 *unit(s)*
- SCWK 130 - Human Behavior in the Social Environment I 3 *unit(s)*

Department Electives (6 units)

Complete two courses from:

- SCWK 121 - Social Welfare Institutions and Policies II 3 *unit(s)*
- SCWK 131 - Human Behavior in the Social Environment II 3 *unit(s)*
- SCWK 140 - Introduction to Field Practicum 3 *unit(s)*
- SCWK 170 - Introduction to Research Methods 3 *unit(s)*
- SCWK 192 - Social Work with Families 3 *unit(s)*

Total Units Required (18 units)

Master(s)

Kinesiology, MS

- Requirements for Admission to Classified Standing
- Requirements for Admission to Conditionally Classified Standing
- Requirements for Advancement to Candidacy
- Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Kinesiology, offered by the Department of Kinesiology, includes five specializations. Our rapidly growing program regularly enrolls 70 to 90 students with varied interests, backgrounds, and goals. Our alumni successfully obtain jobs across the Bay Area, the state of California, the US, and abroad. In addition, the program has placed numerous students in top-tier doctoral programs across the US and Canada. Students are selected to the program based on undergraduate academic achievement and overall potential for success in the program, and in one of the following Graduate Specializations listed below.

Graduate Coordinator: Dr. Cole Armstrong

Requirements for Admission to Classified Standing

The Department of Kinesiology requires the following of all applicants seeking admission to classified standing in the MS - Kinesiology program in addition to meeting requirements for admission to the Graduate Division:

1. A baccalaureate degree with a major or a minor in Kinesiology.
2. A minimum grade point average of 3.0 in the last 60 semester units (or 90 quarter units) of work.
3. A fully completed CSU Apply Application, including the Statement of Purpose on the application. Statement of purpose should include a thoughtful narrative about the applicant's research interests, as the two core

research methods courses necessitate that students think about their final culminating experiences upon acceptance into the program.

4. Two (2) letters of recommendation submitted with online application (or emailed directly to the Graduate Coordinator via verified work email).

Requirements for Admission to Conditionally Classified Standing

The graduate coordinator, in consultation with faculty, may approve admission of a student who meets the requirements for admission to the Graduate Division who:

- a. has neither a major nor a minor in Kinesiology;
- b. has a grade point average between 2.75-3.0 in the last 60 semester units (or 90 quarter units).

The student may become eligible for admission to classified standing upon:

1. satisfactory completion of a maximum of 12 units of upper-division foundation coursework assigned by the Graduate Coordinator or an assigned Academic Advisor. The number of foundation units are determined by the graduate coordinator based on an overall assessment of the applicant's transcripts, experience, and overall portfolio. Foundation units may also be completed prior to entering the program (e.g., in the Spring semester prior to entering in the Fall).
2. completion of six units of graduate course work with a minimum grade point average of 3.0 in each course (if admitted with no foundation units and a GPA of below 3.0).

Requirements for Advancement to Candidacy

General university admission requirements to candidacy for the Master of Science degree are outlined in detail in the Catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. Following are additional requirements of the Department of Kinesiology for the Master of Science degree.

Upon admission to the Graduate Division and prior to registration, each student should meet with a graduate academic advisor in the student's chosen specialization area. If there are any deficiencies in a student's undergraduate work, additional upper-division undergraduate foundation courses (i.e., Foundation Courses) may be required. Foundation courses may not be counted for credit in the master's program. If foundation units are required, additional upper-division KIN units will be assigned by the graduate advisor.

A proposed program for the graduate objective selected should be developed as early as possible with the assistance of a graduate academic advisor in the student's specialization area.

The proposed program must be approved by the graduate advisor, the graduate coordinator, and the Office of Graduate Studies before the student is considered a candidate for the Master of Science degree.

Graduation Requirements

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). In Kinesiology, students must pass either KIN 250 or KIN 251 with a grade of B or better to satisfy this requirement.

Culminating Experience

Plan A (Master's with Thesis)

The purpose of this plan is to provide research-focused concentrated study in one of the subdisciplinary areas of Kinesiology. It is crucial that students electing Plan A identify the focus of their specialization early so that an appropriate thesis topic may be developed and a thesis committee selected. (6 units)

Plan B (Master's - Culminating Project)

This plan is for students interested in producing a research-based creative project in Kinesiology. The plan requires a special project in place of a thesis. (3 units)

Master's Requirements (30 units)

A minimum of 15 units must be 200-level courses. All specializations require KIN 250 (GWAR) and KIN 251 (GWAR).

Required Core Courses (6 units)

- KIN 250 - Fundamentals of Quantitative Research 3 *unit(s)* (GWAR)
- KIN 251 - Fundamentals of Qualitative Research 3 *unit(s)* (GWAR)

Specializations (18 units)

General

The General specialization is aimed at students who desire a holistic, interdisciplinary program of study in Kinesiology that cannot be achieved in the other areas of specialization. Students work directly with their assigned academic advisor to plan out a set of graduate and undergraduate courses that best suit their ultimate career goals.

Electives (18 units)

Electives to be determined in consultation with an assigned advisor.

Exercise Physiology

The Exercise Physiology specialization helps prepare students to meet societal challenges for health and wellness. This area of study provides an advanced theoretical and research background in exercise physiology, as well as hands-on experience gained through a required internship. There are 3 areas of focus in the exercise physiology graduate program: General Exercise Physiology, Clinical Exercise Physiology, and Strength & Conditioning.

Required Specialization Courses (9 units)

- KIN 255 - Advanced Exercise Physiology 3 *unit(s)*
- KIN 256 - Environmental Exercise Physiology 3 *unit(s)*
- KIN 285 - Internship in Kinesiology 1-3 *unit(s)*

Suggested Electives (9 units)

- KIN 152 - Theory of Sport and Fitness Management 3 *unit(s)*
 - KIN 154B - ECG Interpretations and "Graded" Exercise Testing 3 *unit(s)*
 - KIN 157 - Physiological Assessment 3 *unit(s)*
 - KIN 162 - Advanced Fitness Assessment and Exercise Prescription 3 *unit(s)* (*Fall only*)
 - KIN 168 - Psychology of Coaching 3 *unit(s)*
 - KIN 187 - Clinical Exercise Physiology 3 *unit(s)*
 - KIN 188 - Prevention and Care of Athletic Injuries 2 *unit(s)* and KIN 189 - Prevention and Care of Athletic Injuries Laboratory (*Lecture/Lab*)
 - KIN 257 - Biomechanics 3 *unit(s)*
 - KIN 265 - Advanced Motor Development 3 *unit(s)*
 - KIN 266 - Principles and Concepts of Perceptual Motor Learning 3 *unit(s)*
 - KIN 267 - Advanced Sport Psychology 3 *unit(s)*
 - KIN 285 - Internship in Kinesiology 1-3 *unit(s)*
 - BIOL 124 - Systems Physiology 3 *unit(s)*
 - BIOL 131 - Endocrine Physiology 3 *unit(s)*
 - NUFS 108A - Nutrition and Metabolism 3 *unit(s)*
 - NUFS 123 - Nutrition for Sport 3 *unit(s)*
- Other - Advisor Approval Required*

Movement Science

The graduate concentration in Movement Science provides advanced training on human movement analysis from biomechanical, neuromotor control, developmental and learning perspectives as they apply in various sport and physical activity settings. The focus of the Movement Science program specifically includes an interdisciplinary and integrative approach among motor development, motor learning, and biomechanics. Students learn to develop a specific set of skills to apply across various applications in academia, healthcare, and industry, as well as pursue further training at the doctoral level. Specifically, theoretical and practical research training ensures that graduate students have knowledge and skills to analyze human movement using new technologies in industry and applied healthcare.

Required Specialization Courses (9 units)

- KIN 257 - Biomechanics 3 *unit(s)*
- KIN 265 - Advanced Motor Development 3 *unit(s)*
- KIN 266 - Principles and Concepts of Perceptual Motor Learning 3 *unit(s)*

Suggested Electives (9 units)

- KIN 154B - ECG Interpretations and "Graded" Exercise Testing 3 *unit(s)*
- KIN 157 - Physiological Assessment 3 *unit(s)*
- KIN 162 - Advanced Fitness Assessment and Exercise Prescription 3 *unit(s)* (*Fall only*)
- KIN 168 - Psychology of Coaching 3 *unit(s)*

- KIN 187 - Clinical Exercise Physiology 3 unit(s)
 - KIN 255 - Advanced Exercise Physiology 3 unit(s) (Fall only)
 - KIN 256 - Environmental Exercise Physiology 3 unit(s) (Spring only)
 - KIN 267 - Advanced Sport Psychology 3 unit(s)
 - KIN 285 - Internship in Kinesiology 1-3 unit(s)
 - BME 177 - Physiology for Engineers 3 unit(s)
 - BME 207 - Experimental Methods in BME 3 unit(s)
 - ME 267 - Engineering Biomechanics 3 unit(s)
 - PSYC 129 - Neuroscience 3 unit(s)
 - PSYC 135 - Cognition 3 unit(s)
 - PSYC 155 - Human Learning 3 unit(s)
 - PSYC 160 - Clinical Psychology 3 unit(s)
- Other - Advisor Approval Required*

Sports Management

The focus of the Sport Management specialization is to develop culturally informed professionals capable of management and leadership across the many sport industry professions. In addition, the balance between applied research and practical experiences ensures that our graduates have a deep and transferable knowledge base as they enter the job market, as well as potentially influencing sport scholarship by pursuing higher levels of education.

Required Specialization Courses (15 units)

- KIN 280 - Advanced Fieldwork in Sport Management 1-3 unit(s)
- KIN 281 - Legal and Ethical Aspects of Sport 3 unit(s)
- KIN 282 - Marketing and Social Aspects of Sport 3 unit(s)
- KIN 283 - Management, Leadership and Communication in Sport 3 unit(s)
- KIN 284 - Financial Aspects of Sport 3 unit(s)

Suggested Electives (3 units)

- KIN 151 - Sports and Fitness Marketing 3 unit(s)
 - KIN 152 - Theory of Sport and Fitness Management 3 unit(s)
 - KIN 153 - Sport Facility and Event Management 3 unit(s)
 - KIN 164 - Sociocultural Perspectives 3 unit(s)
 - KIN 168 - Psychology of Coaching 3 unit(s)
 - KIN 263 - International Sport and Physical Education 3 unit(s)
 - KIN 264 - Sport Sociology 3 unit(s)
 - AFAM 105 - Race and Health Inequities in the US 3 unit(s)
 - AFAM 106 - Black Diasporas 3 unit(s)
 - AFAM 115 - The Great Migration and Black Communities 3 unit(s)
 - AFAM 151 - Race, Class and the Environment 3 unit(s)
 - AFAM 158 - Race, Sport, Activism & Social Movements 3 unit(s)
 - AFAM 162 - The Aesthetics of Hip-Hop 3 unit(s)
 - BUS2 130 - Introduction to Marketing 3 unit(s)
 - MCOM 105 - Lifestyles, Diversity and the Media 3 unit(s)
 - MCOM 107 - Audio Podcasting, Aesthetics and Invention 3 unit(s)
- Other - Advisor Approval Required*

Psychosocial Aspects of Sport and Physical Activity

The specialization in Psychosocial Aspects of Sport and Physical Activity encompasses a variety of approaches to the study of sport and the body and comprises theories and research methodologies from psychology, sociology, history, philosophy, and cultural studies of sport. Two areas of focus in this specialization include sport and exercise psychology, and critical sport studies. Coaches, students interested in sport and exercise psychology and/or critical social issues in sport, and individuals wishing to pursue advanced degrees in sport and exercise psychology or sport sociology/critical sport studies would benefit from this specialization.

Required Specialization Courses (6 units)

- KIN 264 - Sport Sociology 3 unit(s)
- KIN 267 - Advanced Sport Psychology 3 unit(s)

Suggested Electives (12 units)

- KIN 156 - Introduction to Adapted Physical Activity 3 unit(s)
 - KIN 164 - Sociocultural Perspectives 3 unit(s)
 - KIN 167 - Sports Psychology 3 unit(s)
 - KIN 168 - Psychology of Coaching 3 unit(s)
 - KIN 176 - Exercise Psychology 3 unit(s)
 - KIN 260 - Philosophy of Sport and Embodiment 3 unit(s)
 - KIN 263 - International Sport and Physical Education 3 unit(s)
 - EDCO 218 - Counseling Process & Techniques 3 unit(s)
 - PSYC 135 - Cognition 3 unit(s)
 - PSYC 160 - Clinical Psychology 3 unit(s)
 - PSYC 165 - Theory and Methods of Counseling 3 unit(s)
 - PSYC 210 - Advanced Psychopathology 3 unit(s)
 - SOCI 164 - Social Action 3 unit(s)
 - SOCI 172 - Lesbian, Gay, Bi, Transgender Studies 3 unit(s)
 - SOCI 175 - Sociology of Masculinities and Femininities 3 unit(s)
 - SOCI 201 - Graduate Sociological Theory 3 unit(s)
 - WGSS 169 - Sexualities and the Body 3 unit(s)
- Other - Advisor Approval Required*

Culminating Experience (6 units)

An oral defense is required with both Thesis and Project.

Plan A (Thesis) (6 units)

- KIN 299 - Master's Thesis 1-6 unit(s)

Plan B (Project) (6 units)

- KIN 298 - Special Studies 3 unit(s)
3 additional units of electives selected in consultation with graduate advisor

Total Units Required (30 units)

Nursing, Family Nurse Practitioner Concentration, MS

FNP MS Program Coordinator and Advisor: Dr. Dorothy Moore.

- Requirements for Admission
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (40 units)
- Program Learning Outcomes

A graduate of this program is prepared for advanced nursing practice with a concentration as a Family Nurse Practitioner (FNP). Please see an advisor at The Valley Foundation School of Nursing for more details.

Requirements for Admission

Candidates must meet all the university admission requirements. Students can be admitted in either classified or conditionally classified standing.

The FNP option is offered in Special Session and only if student enrollment is adequate.

Minimum requirements for admission are: After earning a baccalaureate degree in Nursing from an accredited program with a minimum GPA of 3.0 The applicant will submit:

- a. A personal statement describing the applicant's interest in the field and professional goals.
- b. Submit a current resume or curriculum vitae.
- c. A short video submission describing the applicant's interest.
- d. Two letters of recommendations from professionals in the field who can testify to the applicant's ability to succeed in a graduate-level academic program and their suitability to succeed in the profession.
- e. Evidence of having met the health requirements of the school.
- f. Evidence of knowledge and skills in the following areas: physical and psychosocial assessment skills developed to the level that the applicant can perform a complete history and physical exam on a well adult of either gender within one hour. Work completed to make up any of the above deficiencies will not be counted as part of the required units for the MS - Nursing.

Additionally, two years of acute care experience are preferred.

Requirements for Advancement to Graduate Candidacy

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy and for conversion from conditional to classified standing. Advancement to candidacy for the MS - Nursing program also requires that the candidate must have:

1. Earned at least a "B" (3.0) average in a minimum of 9 letter-graded semester units of 100-level and/or 200-level coursework completed while in graduate standing at San José State University and in any coursework completed while in graduate standing at other institutions before enrollment here.
2. Classified standing.
3. Planned a proposed program of study approved by the Nursing Graduate Coordinator and approved by GAPE.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS - Nursing, Concentration FNP Graduation Requirements

Culminating Experience: Project

Candidates for the degree complete a written capstone project as part of their 40-unit regular degree requirement. This project is an investigation of an evidenced-based nursing topic. It shall identify a clinical problem and question(s), state the major theoretical perspectives, explain the significance of the undertaking, relate it to relevant, scholarly and professional literature, set forth the appropriate sources for and methods of gathering and analyzing the data, and offer a conclusion or recommendation.

Completion of Clinical Hours: Practice

All students shall complete a minimum of 540 supervised clinical hours.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (40 units)

Core Courses (19 units)

- NURS 200 - Population Based Health Care Systems 3 *unit(s)*
- NURS 202 - Theoretical Foundations 2 *unit(s)*
- NURS 248 - Advanced Health Assessment 3 *unit(s)*
- NURS 258 - Professional Issues for Nurse Practitioners 2 *unit(s)*
- NURS 259 - Advanced Clinical Pharmacology 3 *unit(s)*
- NURS 260 - Advanced Physiology and Pathophysiology for Advanced Practice Nursing 3 *unit(s)*
- NURS 295A - Research Methods 3 *unit(s)* (GWAR)

FNP Concentration (18 units)

- NURS 250 - Family Nurse Practitioner Concepts and Theory I 2 *unit(s)*
- NURS 251 - Family Nurse Practitioner (FNP) Concepts and Theory II 2 *unit(s)*
- NURS 252A - Family Nurse Practitioner (FNP) Concepts and Theory III 2 *unit(s)*
- NURS 253 - Family Nurse Practitioner Practicum I 2 *unit(s)*
- NURS 254 - Family Nurse Practitioner Practicum II 5 *unit(s)*
- NURS 256 - Family Nurse Practitioner Practicum III 5 *unit(s)*

Culminating Experience (3 units)

- NURS 297 - Master's Project 1-4 unit(s)

Total Units Required (40 units)

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Nursing, MS

MSN Program Coordinator and Advisor: Dr. Dorothy Moore

- Requirements for Admission
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (36 units)
- Program Learning Outcomes

A graduate of this program is prepared for advanced nursing practice with a focus as a Nurse Educator (NE). Please see an advisor at The Valley Foundation School of Nursing for more details.

Requirements for Admission

Candidates must meet all the university admission requirements. Students can be admitted in either classified or conditionally classified standing.

After earning a baccalaureate degree in Nursing from an accredited program and obtaining San José State University admission, one may enter the master's program with a major in Nursing. Graduates of non-accredited baccalaureate programs must take prior coursework that will be assessed to determine requisite content and equivalency to baccalaureate degree requirements. Programs of study for the MS degree with a major in Nursing are based on this assessment. A California RN license is required.

Minimum requirements for admission are:

1. Completion of an accredited baccalaureate program. Applicants who have completed other curricula or who have deficiencies will be considered individually and may be required to enroll in designated courses.
2. Applicants must present a GPA of at least 3.0 in the last 60 units of the undergraduate nursing major.
3. Evidence of licensure as a Registered Nurse (RN) in the State of California.
4. Completion of The Valley Foundation School of Nursing application with all attachments.
5. A personal statement describing the applicant's interest in the field and professional goals.
6. Submit a current resume or curriculum vitae.
7. Two letters of recommendations from professionals in the field who can testify to the applicant's ability to succeed in a graduate-level academic program and their suitability to succeed in the profession.
8. Evidence of having met the health requirements of the school.
9. Evidence of knowledge and skills in the following areas: physical and psychosocial assessment skills developed to the level that the applicant can perform a complete history and physical exam on a well adult of either gender within one hour. Work completed to make up any of the above deficiencies will not be counted as part of the required units for the MS - Nursing.

Requirements for Advancement to Graduate Candidacy

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy and for conversion from conditional to classified standing. The MS - Nursing degree also requires that the applicant has been granted classified standing and has removed any deficiencies involved. In addition, the candidate must have:

1. Earned at least a "B" (3.0) average in a minimum of nine graded semester units of 100- and/or 200-level work completed in graduate standing at San José State University and in any coursework completed in graduate standing at other institutions before enrollment here.
2. Classified standing.
3. Planned a proposed program of study approved by the Nursing School Graduate Coordinator and approved by GAPE.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS Nursing Graduation Requirements

Culminating Experience: Project

Candidates for the degree complete a written capstone project as part of their 40-unit regular degree requirement. This project is an investigation of an evidenced-based nursing topic. It shall identify a clinical problem and question(s), state the major theoretical perspectives, explain the significance of the undertaking, relate it to relevant, scholarly and professional literature, set forth the appropriate sources for and methods of gathering and analyzing the data, and offer a conclusion or recommendation.

Completion of Clinical Hours: Practice

All students shall complete direct patient care supervised clinical hours.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (36 units)

Required Core Courses (19 units)

- NURS 200 - Population Based Health Care Systems 3 *unit(s)*
- NURS 201 - Clinical Leadership Role Development 2 *unit(s)*
- NURS 202 - Theoretical Foundations 2 *unit(s)*
- NURS 248 - Advanced Health Assessment 3 *unit(s)*

- NURS 259 - Advanced Clinical Pharmacology 3 *unit(s)*
- NURS 260 - Advanced Physiology and Pathophysiology for Advanced Practice Nursing 3 *unit(s)*
- NURS 295A - Research Methods 3 *unit(s)* (GWAR)

Functional Area of Specialization (14 units)

Nurse Educator

- EDUC 186 - Using Instructional Media 3 *unit(s)*
- NURS 212 - Curriculum Development in Nursing 3 *unit(s)*
- NURS 214 - Nurse Educator Theory and Direct Care Practicum I 4 *unit(s)*
- NURS 216 - Academic Theory & Practicum II 4 *unit(s)*

Culminating Experience (3 units)

Complete one course from:

- NURS 297 - Master's Project 1-4 *unit(s)*
- NURS 299 - Master's Thesis 1-4 *unit(s)*

Total Units Required (36 units)

Elective courses, if applicable, are to be taken outside The Valley Foundation School of Nursing. The content of these units is to support the chosen functional option. At least one of the courses must be at the 200-level of course work. FNP students do not have elective course requirements.

Nutritional Science, MS

- University Admissions
- Requirements for Advancement to Candidacy for the MS - Nutritional Science
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Nutritional Science program is designed to meet the needs of the student who has a baccalaureate degree and seeks advanced preparation in nutrition science, nutrition education, geriatric nutrition, and foodservice/restaurant management and packaging. The program is intended to prepare candidates to assume leadership roles in their profession and communities and to provide the opportunity to acquire a foundation for doctoral study. Our MS graduates have earned doctorates, become college and university faculty, been employed in private, federal, and state research institutions, and have established their own private practice or consulting business. In the process of fulfilling requirements for the MS degree, it is possible to complete the academic requirements of the Academy of Nutrition and Dietetics (AND) and the Accreditation Council for Education in Nutrition and Dietetics (ACEND) toward becoming a registered dietitian. Courses are scheduled to accommodate the time needs of working graduate students.

Additional information is available on the Department of Nutrition, Food Science and Packaging website.

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. See the Graduate Admissions website and Graduate Admissions for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see English Language Proficiency Requirement.

Requirements for Admission to Classified Standing

Candidates must meet all the university admission requirements. Students can be admitted to the MS, Nutritional Science program in either classified or conditionally classified standing. All prospective students submit one application to obtain approval for university-level admission and department-level admission into the M.S. in Nutritional Science program. A departmental selection committee will rank applicants for admission to classified standing on the basis of information provided in the application. Criteria include:

1. BS degree in Nutritional Science, Food Science, Food Management, Packaging or equivalent
2. Grade point average of B.S. upper division coursework
3. Grade point average of prerequisite science courses as described in the MS, Nutritional Science graduate handbook
4. GRE scores
5. Letter of intent
6. Letter of recommendations
7. Research and professional experience

Requirements for Admission to Conditionally Classified Standing

Students seeking an MS, Nutritional Science degree who meet requirements for admission to the Graduate Division, but do not have a B.S. degree in Nutritional Science, Food Science, Foodservice Management, Packaging or equivalent, may apply for conditionally classified standing in the department. The decision to accept the student for study in this program will be made by a departmental selection committee. Criteria include:

1. BA or BS degree
2. Grade point average of B.S. or B.A. upper division coursework
3. Number of prerequisite course requirements completed and grade point average. Course requirements described in the MS, Nutritional Science graduate handbook.
4. GRE scores
5. Letter of intent
6. Letter of recommendations
7. Research and professional experience

Requirements for Advancement to Candidacy for the MS - Nutritional Science

Prior to registering for the first time (or upon re-entering), a student should consult with the Graduate Coordinator to develop a schedule of courses. Advancement to candidacy for the Master's degree in Nutritional Science requires favorable action of the Graduate Committee of the Department of Nutrition, Food Science and Packaging and of the university's Office of Graduate Admissions & Program Evaluations (GAPE). In general, students will be recommended for candidacy when they:

1. Fulfill all university requirements for advancement to candidacy.

2. Attain classified graduate standing
3. Complete a minimum of 9 units of letter-graded approved courses.
4. Earn a minimum 3.0 grade point average in all classes listed on the candidacy form.
5. Successfully complete NUFS 217 with at least a "C" to meet the Graduation Writing Assessment Requirement (GWAR).
6. Select a graduate advisor and thesis or project topic.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS - Nutritional Science Graduation Requirements

Completion of 30 units of approved coursework including the core courses. Maintenance of a 3.0 GPA is necessary. Completion of the culminating experience of such scope and manner as determined by the student's graduate committee. The program consists of 30 semester units of approved work, including 6 units of Plan A (Thesis) or 3 units of Plan B (Project).

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Plan A (Thesis)

For this plan, the student is required to complete 6 units of NUFS 299 - Master's Thesis. The student is required to complete a research project under advisement of a Nutrition, Food Science and Packaging faculty. The research must result in the generation of a thesis that meets the University Master's Thesis and Doctoral Dissertation Guidelines. The student must pass an oral examination defending the research to a departmental faculty committee. The student must prepare an oral presentation or poster presentation for the public.

Plan B (Project)

For this plan, the student is required to complete 3 units of NUFS 298 - Special Studies in Nutrition, Food Science and Packaging. The student is required to complete a project under advisement of a Nutrition, Food Science and Packaging faculty. The student is required to submit a written project in publication format, pass an oral examination defending the project to a departmental faculty committee, and prepare an oral presentation or poster presentation for the public.

Master's Requirements (30 units)

Core Courses (15 units)

- NUFS 201 - Colloquium in Nutrition, Food Science and Packaging 3 *unit(s)*

- NUFS 217 - Issues in Nutrition, Food and Packaging 3 *unit(s)* (GWAR)
- NUFS 257 - Biostatistics in Research 3 *unit(s)*
- NUFS 295A - Research Methodology 3 *unit(s)*

Complete one course:

- NUFS 219A - Advanced Nutrition and Metabolism 3 *unit(s)*
- NUFS 219B - Seminar in Advanced Topics in Human Nutrition & Dietetics 3 *unit(s)*
- NUFS 242 - Advanced Foodservice/Restaurant Management 3 *unit(s)*
- NUFS 243 - Nutrition and Dietetics Leadership 3 *unit(s)*
- PKG 270 - Package Design for End Use 3 *unit(s)*

Culminating Experience (3-6 units)

Complete Plan A (Thesis) or Plan B (Project)

Plan A (Thesis) (6 units)

- NUFS 299 - Master's Thesis 1-6 *unit(s)*

Plan B (Project) (3-6 units)

- NUFS 298 - Special Studies in Nutrition, Food Science and Packaging 1-6 *unit(s)* (3 *units required*)
- An additional 3-unit elective selected in consultation with the graduate advisor 3 *unit(s)*

Specialization Area (9-12 units)

9-12 units electives selected in consultation with the graduate advisor

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Occupational Therapy, MS

- Admission Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (72 units)
- Program Learning Outcomes

The SJSU Department of Occupational Therapy offers the oldest accredited OT program in the CSU system. Founded in 1943, the Master of Science in Occupational Therapy (MSOT) degree program is designed for those who have already earned a baccalaureate degree in another field. The program of study enables students to obtain the education and degree necessary to be eligible to practice as an occupational therapist. Once the MS degree in Occupational Therapy is complete, including the successful completion of the OCTH 201A and OCTH 201B courses, the student is eligible to sit for the national certification examination. Successful completion of the examination qualifies the candidate to apply for national certification and state licensure.

The MOST program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE), located at 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929. ACOTE's telephone number is (301) 652-6611. National Board for Certification in Occupational Therapy (NBCOT) School Program Performance Data is also available on the NBCOT website.

See the department website for more information.

Admission Requirements

The curriculum of the Master of Science in Occupational Therapy degree program is designed for those who have already earned a baccalaureate degree in another field. The program of study enables students to obtain the education and degree necessary to be eligible to practice as an occupational therapist. Once the MS degree in Occupational Therapy is complete, including the successful completion of the OCTH 201A and OCTH 201B courses, the student is eligible to sit for the national certification examination. Successful completion of the examination qualifies the candidate to apply for national certification and state licensure. Applications are accepted October 1 - March 1 for the subsequent Fall semester. It is important that students apply as early as possible.

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the Occupational Therapy Centralized Application Service (OTCAS) and to the department to obtain admission into the Occupational Therapy program. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the English Language Proficiency Requirement.

Admission to Classified Graduate Standing

Prospective students must meet the following prerequisites. All prerequisite courses must be completed before acceptance into the program:

1. Cumulative GPA of 3.0 (on 4.0 scale) in the last 60 semester units (or 90 quarter units) of coursework and a minimum grade of B or better for all prerequisite courses.
2. Minimum of 80 hours of volunteer experience or equivalent paid work experience preferably in 2 different types of therapeutic settings; 60 of the hours must be completed under the supervision of an occupational therapist. The additional 20 hours must be completed in a community service setting. Hours must be verified by a supervisor on the Evaluation Form for Volunteer Experience available on the Department of Occupational Therapy website; forms are submitted at the time of application.
3. Completion of Student Information Form available on the OTCAS and subsequent submission of the first page of the OTCAS application form and the general essay from the OTCAS application directly to the Occupational Therapy department.

4. Human Anatomy with human cadaver laboratory (virtual laboratory acceptable), 3 semester units or 4 quarter units. Course must be taken within 7 years of application to the program.
5. Physiology with laboratory, 3 semester units or 4 quarter units.
6. General psychology course, 3 semester or 4 quarter units.
7. Introductory Sociology or Cultural Anthropology course, 3 semester or 4 quarter units.
8. Abnormal Psychology course, 3 semester or 4 quarter units.
9. College-level skills course which may be taken through adult education. The purpose of the course is to have students work with an artistic medium. Acceptable courses include Ceramics, painting, weaving, graphic arts and woodworking. Previous work may be accepted as fulfilling this requirement at the discretion of the Admissions Committee.
10. Statistics course, either an upper-division course offered by the departments of education, social sciences, psychology or division of health professions or a lower division statistics course that covers correlations and analysis of variance, 3 semester or 4 quarter units. Course must be completed within seven years of the application.
11. Neuroanatomy - Course available online via Open University through the SJSU Occupational Therapy department. Courses from other institutions may also be acceptable at the discretion of the Admissions Committee. Accepted list of courses available on the OT Program website. 3 semester or 4 quarter units.
12. Evidence of an understanding of occupational therapy and defined career goals in relation to the profession as stated on the Student Information Form and/or accompanying personal written statements (see #3 above).
13. Ability to write as demonstrated in the student information form (see #3 above), transcripts of all previous work submitted and any correspondence.
14. Three letters of recommendation from former instructors, employers, supervisors, or other individuals knowledgeable about the candidate's academic abilities, capacity for goal-directed behavior, and the ability to integrate and synthesize ideas. One letter must be from an academic instructor.

All prerequisite courses must be completed before acceptance into the program. All transcripts must be sent to OTCAS in addition to the University. For current admission procedures, please visit the Occupational Therapy Department website.

These requirements exist for all prospective students holding baccalaureate degrees in other disciplines. The department reviews completed files and makes recommendations for acceptance or denial to the SJSU Admissions Office.

Requirements for Advancement to Candidacy

Matriculated graduate students must submit a Petition for Advancement to Graduate Candidacy a minimum of one semester prior to graduating. General university requirements for advancement to candidacy are detailed in the Graduate Policies and Procedures section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. Successful completion of OCTH 245, including passing the final written paper in this course with a grade of "B" or better, fulfills the GWAR in this program.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

In consultation with the department graduate coordinator, the candidate will develop and pursue a program of study. The candidate must successfully complete all requirements of the selected plan including the course work specified in the Master's Degree Approval Program.

Global Experience

To satisfy the Department's International Experience requirement, students may participate in an international experience. Alternatives to the requirement must be approved by the Occupational Therapy department. Specific details can be found on the department's website.

Culminating Fieldwork Requirement

Following completion of the academic coursework (60 units), students must be enrolled in and complete two Fieldwork Courses, OCTH 201A and OCTH 201B, prior to the University awarding the Master of Science degree in Occupational Therapy.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Plan B (Project)

Students in this program fulfill their culminating experience requirement with a Plan B (Project). The Comprehensive Master's project requires critical analysis and synthesis of information gathered, crafted into a publishable paper with a poster and oral presentation. Students will enroll in 3 units of OCTH 295 - Advanced Research Methods in Occupational Therapy which supports inquiry into advanced topics in occupational therapy practice, including theoretical and clinical problems.

Master's Requirements (72 units)

Core Courses (57 units)

- OCTH 211 - Historical and Theoretical Foundations of Occupational Therapy 3 *unit(s)*
- OCTH 212 - Occupations through the Lifespan 3 *unit(s)*
- OCTH 213 - Professional Development I 3 *unit(s)*
- OCTH 216 - Evaluation in Occupational Therapy 3 *unit(s)*
- OCTH 221 - Occupational Analysis 3 *unit(s)*
- OCTH 222 - Functional Kinesiology for Occupational Therapists 3 *unit(s)*
- OCTH 224 - Occupational Therapy Practice in the Community I 3 *unit(s)*
- OCTH 226 - Occupational Therapy with Children 3 *unit(s)*
- OCTH 233 - Professional Development II 3 *unit(s)*
- OCTH 234 - Occupational Therapy Practice in the Community II 3 *unit(s)*
- OCTH 236 - Occupational Therapy with Youth 3 *unit(s)*
- OCTH 245 - Introduction to Research Methods 3 *unit(s)* (GWAR)
- OCTH 246 - Occupational Therapy with Young Adults 3 *unit(s)*
- OCTH 256 - Occupational Therapy with Middle Aged Adults 3 *unit(s)*
- OCTH 266 - Occupational Therapy with Older Adults 3 *unit(s)*
- OCTH 275 - Evidence Based Practice in Occupational Therapy 3 *unit(s)*
- OCTH 276 - Practicum and Seminar 1A 3 *unit(s)*

- OCTH 286 - Practicum and Seminar 1B 4 *unit(s)*

Complete One Course (Chosen with Advisor):

- OCTH 210 - Seminar in Occupational Therapy 2-3 *unit(s)*
- OCTH 210ITL - Seminar in Occupational Therapy: International Experience 2-3 *unit(s)*

Culminating Fieldwork (12 units)

- OCTH 201A - Field Work Experience 3-6 *unit(s)* (6 *units required*)
- OCTH 201B - Advanced Field Work Experience 3-6 *unit(s)* (6 *units required*)

Culminating Experience (3 units)

- OCTH 295 - Advanced Research Methods in Occupational Therapy 3 *unit(s)*

Total Units Required (72 units)

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point average of 3.0 in order to graduate.

Public Health, MPH

- Graduate Admission
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (42 units)
- Program Learning Outcomes

San José State University's Department of Public Health and Recreation offers a Master of Public Health (MPH) degree with a specialization in community health education in two formats; Campus (regular session) and Online (through Professional and Continuing Education). Both campus and online students engage in the same rigorous course of study. The MPH degree on campus offers students the flexibility to complete their degree in two years or more, depending on personal circumstances. The MPH online option is offered through special session and is a fast-paced, 24-month program of study.

Our MPH Program was founded in 1970 to prepare community health education practitioners and has been continuously accredited by the Council on Education for Public Health (CEPH) since 1974. CEPH is the independent agency officially recognized to accredit graduate programs in public health. As stated in its mission statement, CEPH assures quality in public health education and training to achieve excellence in practice, research and service, through collaboration with organizational and community partners. The SJSU MPH Program is well-known for its practice-oriented, community-based training. The program's essential mission is:

To provide a professional education that prepares students to be innovative thinkers, critically engaged practitioners, and transformative leaders who can apply the conceptual frameworks, health education and public health competencies, in order to develop programs, build community capacity, advocate policy for health equity, and contribute to evidence-based public health practice.

The MPH program's mission is achieved through an integrated program of instruction, scholarship, and internships in partnership with a diverse network of community programs and practitioners. Our ultimate goal is public health and social justice through planned, organized, and empowering community efforts.

Additional information is available on the Master of Public Health website.

Graduate Admission

University Admission

Candidates must apply through the CSU admissions portal, Cal State Apply, and meet all university graduate admission requirements.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Program Admission

New students are admitted once a year, and begin course work during the fall semester in both online and campus formats. A detailed Admissions Information Packet is available at www.sjsu.edu/hsr/academicprograms/mph.

Applications for the Campus and Special Session Online formats are accepted between October 1 and June 1 for fall admission. Applications after June 1 will be considered on a space-available basis. Applications received after July 1 will not be eligible for review and will require resubmission for consideration for the next application cycle. Applying to the MPH program, both campus and online, requires two parallel, but separate, application processes. All MPH applicants must:

- A. Submit a complete university application through Cal State Apply. Successful applicants must be admitted to the university by the SJSU Graduate Admissions and Program Evaluations.
- B. Submit a complete application to the MPH program, which includes:
 1. At least two letters of recommendation on official letterhead, signed, and include contact information for author
 2. Resume/CV
 3. Statement of Purpose (1-2 pages)

Additional information and the Application Packet are available on the MPH Admissions website.

Program Requirements for Admission to Classified Standing

Students can be admitted in either classified or conditionally classified standing. To be admitted to the Master of Public Health Program in Classified status, an applicant must possess a baccalaureate degree with an overall minimum GPA of 3.0 in the last 60 semester or quarter units, demonstrated multicultural experience, and a clear commitment to public health as evidenced through work or volunteer experiences.

Program Requirements for Admission to Conditionally Classified Standing

Admission with Conditionally Classified standing is available to Campus format applicants only. If an applicant's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental requirements, the applicant may be admitted with conditions that will include taking longer than two

years to complete the program and taking writing and/or computation preparation courses. The program admissions letter will explain terms and requirements.

Requirements for Advancement to Candidacy

Matriculated graduate students must submit a Petition for Advancement to Graduate Candidacy a minimum of one semester prior to graduating. General university requirements for advancement to candidacy for the MPH degree are detailed in the Graduate Policies and Procedures section.

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Course Requirements

To meet the requirements for the MPH, a student must complete 42 units (and satisfy the program GWAR requirement) with a cumulative GPA of 3.0 or better.

In consultation with the department graduate coordinator, the candidate will develop and pursue a plan of study. The candidate must successfully complete all requirements of the selected plan including the course work specified in the Master's Degree Approval Program. The MPH program requires grades of B- or better to pass courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

The student must complete one of three culminating experience options: Plan A (Thesis), Plan B (Project), or the courses-only Plan B (Comprehensive Examination). Master's theses and graduate projects may only be undertaken by regular session MPH Campus students upon departmental approval and will require additional units. The Plan A (Thesis) option requires an additional 6 units of coursework and College of Graduate Studies approval of the completed thesis. The Plan B (Project) option requires a minimum of 3 additional units of coursework.

Plan A (Thesis)

Campus students opting to complete a master's thesis will take the PH 299 - Master's Thesis twice for an additional 6 units over program requirements. The student is responsible for securing the commitment of a full-time tenured or tenure-track MPH faculty member who agrees to serve as thesis committee chair. The student must also secure the commitments of two additional university faculty members, one of whom must be a full-time tenure or tenure-track faculty member, to serve as the student's thesis committee. The student must write a thesis proposal and have it approved by the thesis committee, and pass the HS 205 and PH 215 courses before enrolling in the PH 299. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral

Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

Campus students opting to complete a master's project will take the PH 298 - Graduate Project for an additional 3-6 units over program requirements.

Plan B (Comprehensive Exam)

All Online students and Campus students opting for the courses-only option must pass the Comprehensive Exam (given once a semester) to earn the MPH degree. The Comprehensive Exam is the student's opportunity to demonstrate mastery and integration of the knowledge and skills of the MPH curriculum. The comprehensive exam is a written exam that is administered on campus.

Special Session Program Information

Academic Programs offered through Special Session are operated by the Professional and Continuing Education. Registration and enrollment in a Special Session course or program must use the special session application form and will follow special session fee and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the Professional and Global Engagement website for more information.

Master's Requirements (42 units)

Required Courses (37 units)

- PH 200 - Contemporary Practice in Public Health 2 *unit(s)*
- PH 201 - Groups and Training: Theory and Practice 2 *unit(s)*
- PH 205A - Quantitative Methods for Public Health Practice I 3 *unit(s)*
- PH 205B - Quantitative Methods in Public Health 3 *unit(s)*
- PH 215 - Qualitative Methods for Public Health Practice 3 *unit(s)*
- PH 225 - Evaluation Methods for Public Health Practice 3 *unit(s)*
- PH 262 - Health Policy and Organization 3 *unit(s)*
- PH 265 - Environmental Health 3 *unit(s)*
- PH 271 - Theoretical Foundations of Public Health 3 *unit(s)*
- PH 272 - Health Promotion Planning and Evaluation 3 *unit(s)* (GWAR)
- PH 276 - Community Organization and Health Promotion 3 *unit(s)*
- PH 277 - Multicultural Communication for Health Professionals 3 *unit(s)*
- PH 293 - Public Health Leadership 3 *unit(s)*

Required Practicum (5 units)

- PH 291A - Fieldwork Seminar 1 *unit(s)*
- PH 291B - Fieldwork Practicum 1-2 *unit(s)* (Students take 2 units of PH 291B)
- PH 291C - Professional Skills for Public Health Practice 1 *unit(s)*
- PH 291P - Professional Development 1 *unit(s)*

Culminating Experience (0-6 units)

Students in the MPH program complete a Plan B (Comprehensive Exam). Campus MPH students have the option of choosing either a Plan A (Thesis) or Plan B (Project) instead. The thesis and project options require additional coursework.

Plan A (Thesis) (6 units)

The Plan A (Thesis) option requires two consecutive semesters of the PH 299 for an additional 6 units of coursework.

- PH 299 - Master's Thesis 3 unit(s) (Students take 6 units of PH 299)

Plan B (Project) (3-6 units)

The Plan B (Project) option requires an additional 3-6 units of coursework.

- PH 298 - Graduate Project 3 unit(s) - 6 unit(s)

Plan B (Comprehensive Exam) (0 units)

Total Units Required (42 units)

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Recreation, International Tourism Concentration, MS (Not Accepting Students)

- Graduation Writing Assessment Requirement
- Master's Requirements (30 units)

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core Courses (6 units)

Required Courses (9 units)

Electives (9 units)

Selected in consultation with graduate advisor.

Culminating Experience (6 units)

Total Units Required (30 units)

Recreation, MS (Not Accepting Students)

- Overview
- General Requirements for Admission
- Requirements for Advancement to Candidacy for the MS - Recreation
- Master's Requirements (30 units)

Overview

The recreation degree program, founded in 1947 by the Department of Public Health and Recreation, has a core accredited by the Council on Accreditation of Park, Recreation, and Tourism Related Professions (COAPRT). The degree has maintained continuous accreditation since its first awarding of this status occurred in April 1987, demonstrating the rigor and recognition of our programs. The Bachelor's degree in Recreation is a nationally accredited program comprised of a core set of classes and courses split generally between concentration courses and major electives. Graduates completing one of these concentrations are eligible to apply for national and state certification. While the general recreation degree is the most flexible in terms of choosing related electives, students may instead elect to complete a more specialized course of study in one of our two approved concentrations within the B.S. Recreation Degree: Recreation Management and Recreation Therapy. We also offer M.S. in Recreation, all of which are designed to meet increasing needs and demands for recreation professionals and administrators in our growing fields of practices in public, non-profit, and commercial sectors, not only locally and regionally, but also nationally and globally.

General Requirements for Admission

Applicants to the graduate program must complete all sections of the CSU online application including the personal statement which must address the applicant's potential to develop expert knowledge and the advanced skills needed to succeed in the field and/or to continue study in a doctoral program. Criteria for admission include an overall grade point average of 2.5 and an upper-division grade point average of 3.0. Additionally, applicants are requested to send a copy of their personal statement and their resume to the department graduate coordinator.

Requirements for Advancement to Candidacy for the MS - Recreation

In addition to university requirements for advancement to candidacy or the Master of Science degree in Recreation, students must have completed the following requirements: all deficiencies must be completed with a grade point average of at least 3.0; the admission to candidacy form must be completed and approved by the graduate program advisor and the Associate Dean for College of Graduate Studies; and the Graduation Writing Assessment Requirement (GWAR) must be demonstrated at least one semester prior to submission of the admission to candidacy form. Courses that satisfy the GWAR are listed in the course requirements for the program.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core Courses (6 units)

Electives (18 units)

Selected in consultation with graduate advisor.

Culminating Experience (6 units)

Total Units Required (30 units)

Social Work, MSW

- Admissions Requirements
- Advancement to Candidacy
- Graduation Requirements
- Master's Requirements (37-60 units)
- Program Learning Outcomes

The MSW Program offers graduate professional education in advanced generalist social work practice from a transcultural multi-systems perspective. It prepares graduates for advanced practice and leadership in areas of interest such as: health and aging; children, youth, and families; and mental health. The curriculum emphasizes the application of skills in those areas of practice where the need for social workers in the next decade will be the greatest in the State of California. The graduate program, offered by SJSU's School of Social Work has been fully accredited by the National Commission on Accreditation of the Council on Social Work Education since 1973.

Department Website: www.sjsu.edu/socialwork.

Admissions Requirements

University Admissions Requirements

All graduate applicants must submit a complete graduate application by applying through the CSU Cal State Apply system. Candidates must meet all university-level admissions requirements.

Program Admissions Requirements

In addition to these general requirements established by the university, applicants for admission for the Master's of Social Work degree must demonstrate a commitment to social work goals either by having completed undergraduate social work education, or by holding a baccalaureate in a related field and having significant experience, and/or personal involvement with social issues as they relate to various marginalized groups and communities.

To be admitted to the School of Social Work, an applicant must first complete the graduate application for admission to the University through Cal State Apply. The applicant then submits a separate application to the MSW program which includes:

- a. A personal statement describing the applicant's interest in the field and professional goals.

- b. Three recommendations from professionals in the field or former professors who can testify to the applicant's ability to succeed in a graduate-level academic program and his or her suitability to meet the challenges of the profession.
- c. A description of all social work-related experience (paid, internship, and/or volunteer).
- d. A sample of the applicant's best writing, i.e., a paper written for an upper-division or graduate-level class, technical report, or other example of academic or professional written work.

Applications to the Master's in Social Work program and all supporting materials must be sent directly to the School of Social Work for review and recommendation by the MSW Program Admissions Committee.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirement webpage.

Advanced Standing Option

The Advanced Standing option allows qualified candidates with a Bachelor's degree in Social Work from an accredited program to complete the Master's program in one summer and one academic year. Admission to Advanced Standing (AS) in the MSW Program at SJSU is competitive. The following are areas of evaluation for admission to AS. Meeting these minimum requirements does not guarantee admission into AS. Please also note our ability to offer AS and thus admission to AS is dependent on program level resources.

- A. Bachelor's degree in social work from a program accredited by CSWE at the time of admission or within the last 7 years;
- B. GPA (minimum of 3.5);
- C. Minimum grade of A- in all BSW/BASW (social work major) courses;
- D. At least 400 hours of recent social work-related experience (cumulative internship, paid, or volunteer experience) in addition to the 400-hours requirement for the BSW degree;
- E. Three letters of recommendation specific to qualifications for Advanced Standing, in addition to the usual scored recommender forms;
- F. Evaluations from BSW/BASW field internships;
- G. Personal statement; and,
- H. Personal interview.

Conditionally Classified Standing

An applicant who does not meet all requirements for admission in classified standing for the Master's in Social Work may be admitted into the program on a conditionally classified basis. The MSW Program Admissions Committee may consider applicants who possess strong or considerable work experience and who can by additional preparation remedy minor academic deficiencies. Such admissions will be conditional upon completion of specific courses listed by the graduate advisor on the admission notification.

Advancement to Candidacy

Students must complete all university requirements for advancement to candidacy for the master's degree as outlined in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

The student will consult with the MSW graduate advisor to complete a petition for advancement to candidacy. The petition includes an official plan of study listing all courses needed to complete the requirements for the degree. The plan of study must be approved by the MSW Graduate Advisor and then by the Office of Graduate Admissions and Program Evaluations (GAPE), which notifies the student of advancement to candidacy.

The student must also demonstrate an aptitude for advanced study in social work, as measured by successful completion of the Foundation Year of study, instructor appraisals, and/or evaluation of previous academic work (i.e., applicable transfer units or course substitutions).

Graduation Requirements

University Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience: Project (Plan B)

Candidates for the degree complete a capstone project as part of their 37-unit for Advanced Standing or 60-unit regular degree requirement. This project is a complete research study on a social work-related topic.

Program Requirements

The School of Social Work offers an On-Campus MSW Program and an Online/Hybrid MSW Program. All students in the Master's of Social Work program must complete a total of 60 semester units of study in social work with a minimum cumulative grade point average of 3.0 overall. This includes two years (1,200 hours) of field internship in a social agency or community setting selected and approved by the MSW Field Education Committee. Students must pass all letter-graded classes with a "C" or better grade, and pass all field practicum courses with a credit "CR" grade.

Students admitted in the Advanced Standing Option are required to take and clear two bridge courses and the Graduation Writing Assessment Requirement (GWAR) during the summer before the start of the Fall semester. Once students in this program option complete these courses they enter their final year of the MSW program.

On-Campus Program

The On-Campus MSW Program offers a Two-Year/Full-Time, Three-Year/Part-Time plan of study, and an Advanced Standing option. The Two-Year Plan requires a full-time commitment to the program. The Three-Year plan is designed for working professionals. It includes two years of field practicum and coursework spread over three academic years, with many courses taught in the evening and on weekends. Both plans have identical course requirements for completing the degree.

To assist matriculated students in progressing more rapidly toward their MSW degree and to increase accessibility to the course curriculum for both Two-Year/Full-Time and Three-Year/Part-Time students, the MSW Program sometimes offers courses during the summer and winter terms when the budget allows for this. The number and type of courses are dependent upon student interest and faculty resources.

For detailed information on the program, see the School of Social Work Master of Social Work (MSW) webpage.

Online/Hybrid Program (Special Session)

The Online/Hybrid MSW Program offers a two-year continuous enrollment program and an Advanced Standing option. The two-year program requires continuous enrollment (i.e., two to three academic courses and a field education course concurrently through the calendar year). In the Online/Hybrid program, academic courses are completed online (with asynchronous sessions and synchronous sessions usually on weekday evenings), and field

education is completed in-person. Note that the three areas of interest are also offered in the Online/Hybrid MSW Program (children, youth, and families; mental health; and health and aging), although the health and aging area is currently in a pilot phase and might not be offered consistently. The Online/Hybrid MSW Program degree requirements and the social work competencies covered are the same as those of the On-Campus MSW Program.

Special Session Information

Academic Programs offered through Special Session are operated by the Professional and Continuing Education (PaCE). Registration and enrollment in a Special Session must use the special session application form and will follow special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the Professional and Continuing Education for more information.

Master's Requirements

Program Options (9-32 units)

Regular Program Option Foundation Core Curriculum (32 units)

Students admitted to the regular program option have the choice to complete the program in 2 years (Full Time) or 3 years (Part Time). The full time students will complete all of their Foundation or Generalist (core) Curriculum in their first year of the program, whereas the part time students complete the core curriculum in two years (12 units in their first year and 20 units in their second year).

- SCWK 200W - Social Work Graduate Writing Course 3 *unit(s)* (GWAR)
- SCWK 202 - Social Policy and Services: History and Values 3 *unit(s)*
- SCWK 204 - Social Policy Analysis 3 *unit(s)*
- SCWK 212 - Human Behavior in Social Environment I 3 *unit(s)*
- SCWK 214 - Human Behavior in Social Environment II 3 *unit(s)*
- SCWK 220 - Transcultural Generalist Practice I 3 *unit(s)*
- SCWK 221 - Transcultural Generalist Practice II 3 *unit(s)*
- SCWK 230 - Social Work Practicum I 1-6 *unit(s)*
- SCWK 231 - Social Work Practicum II 1-6 *unit(s)*
- SCWK 240 - Research Methods and Design 3 *unit(s)*

Advanced Standing Option Summer Bridge Courses (9 units)

Students admitted to the Advanced Standing Option use their Summer Bridge courses to replace the Foundation Core Curriculum courses (32 units).

- SCWK 243 - Advanced Standing SW Bridge - Grad 2 *unit(s)*
- SCWK 215 - Advanced Standing Bridge Integrated 4 *unit(s)*
- SCWK 200W - Social Work Graduate Writing Course 3 *unit(s)* (GWAR)

Advanced Year Core Curriculum (12 units)

Transcultural Multi-Systems Areas of Interest

Elective courses must be planned in consultation with the Graduate Advisor.

Students are required to take one advanced course from each bucket; Advanced Practice, Advanced Policy, and Advanced General Elective.

- On-campus program: students are required to take an additional Advanced Practice Course in the Fall.
- Online/hybrid students are required to take an additional Advanced Elective course in the Spring.

Advanced Practice (3 units)

Complete one course:

- SCWK 222 - Transcultural Advanced Generalist Practice I: Family Systems Focus 3 *unit(s)*
- SCWK 223 - Transcultural Advanced Generalist Practice II: Community Systems Focus 3 *unit(s)*
- SCWK 251 - Social Work in Health and Aging 3 *unit(s)*
- SCWK 261 - Social Work Practice with Children 3 *unit(s)*
- SCWK 262 - Social Work Practice with Adolescents 3 *unit(s)*
- SCWK 265 - Child Welfare Practice in Public and Government Systems 3 *unit(s)*
- SCWK 272 - Social Work in Educational Settings 3 *unit(s)*
- SCWK 281 - Social Work in Mental Health 3 *unit(s)*

Advanced Policy (3 units)

Complete one course:

- SCWK 250 - Policy Practice in Health and Aging 3 *unit(s)*
- SCWK 260 - Policy Practice in Child and Family Welfare 3 *unit(s)*
- SCWK 280 - Policy Practice in Mental Health 3 *unit(s)*

Advanced General Electives (6 units)

Two courses selected in consultation with graduate advisor.

- SCWK 224 - Advanced Generalist Practice With Spanish Speaking Populations 3 *unit(s)*
- SCWK 263 - Social Work and the Law 3 *unit(s)*
- SCWK 283 - Psychopharmacology for Social Workers 3 *unit(s)*
- SCWK 285 - Social Work and Social Problems 3 *unit(s)*
- SCWK 285ITL - Social Work and Social Problems: International Experience 3 *unit(s)*
- SCWK 287 - Advanced Generalist Practice in Substance Abuse 1-3 *unit(s)*
- An additional 200-level course selected in consultation with graduate advisor.

Practicum (10 units)

- SCWK 232 - Social Work Practicum III 1-6 *unit(s)*
Students generally take 5 units of SCWK 232.
- SCWK 233 - Social Work Practicum IV 1-6 *unit(s)*
Students generally take 5 units of SCWK 233.

Culminating Experience (6 units)

Project (Plan B)

- SCWK 298A - Special Study A 1-4 unit(s) (3 units required)
- SCWK 298B - Special Study B 1-4 unit(s) (3 units required)
- Comprehensive Examination 0 unit(s)

Total Units Required (37-60 units)

Students in the Regular Program Option complete the program with 60 units and students in the Advanced Standing Option complete the degree with 37 units.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Doctoral

Audiology, AUD

- University Admissions
- Requirements to Admission
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Doctorate Requirements (110 units)
- Program Learning Outcomes

The Doctor of Audiology program, offered by the Department of Audiology, is a 4-year course of study that includes academic courses, clinical rotations, and a doctoral research project. Audiology is an allied health profession that is concerned with 1) the science of the hearing and balance mechanisms; and 2) the clinical identification, diagnosis, and treatment of individuals with hearing and balance disorders. The Doctor of Audiology program will prepare individuals to diagnose and treat hearing loss and other disorders involving the ear, advise patients on means to use and preserve their remaining hearing, and select and fit hearing aids and other devices. Coursework includes instruction in acoustics, anatomy and physiology, hearing measurement, auditory pathology, middle and inner ear analysis, vestibular analysis and rehabilitation, rehabilitation therapies and assistive technologies, and pediatric and other special applications.

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system at calstate.edu/apply and meet all the university admission requirements. Applicants apply separately to the Communication Sciences and Disorders Centralized Application Service (CSDCAS) to obtain admission into the AuD degree program. See the GAPE Graduate Admissions website and this Catalog for general information about Graduate Admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE. For TOEFL

Requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Information in this Catalog.

Requirements to Admission

The admission requirements for the Audiology doctoral program are provided in EO 1112, Article 2, Admissions. They are as follows:

1. Completion of a baccalaureate degree earned at an institution accredited by a regional accrediting association, or an equivalent academic preparation as determined by the appropriate campus authority (i.e., Graduate Admissions and Program Evaluation [GAPE]).
2. An overall GPA of 3.0 or better in all undergraduate and graduate coursework.
3. Completion of prerequisite courses in:
 - a. Hearing/Speech science
 - b. Phonetics
 - c. Language development
 - d. Neurology and neurophysiology of communication
 - e. Introduction to audiology
 - f. Deaf studies/ASL (optional)
 - g. Anatomy and Physiology of Speech and Hearing Mechanism
 - h. One course in each of the following areas
 - biological sciences,
 - physical sciences,
 - social/behavioral sciences, and
 - statistics
4. An applicant-authored statement of purpose reflecting a commitment to audiology, including the applicant's preparation for training in this profession, aptitude and motivation, commitment to working with diverse populations and the basis for interest in audiology and specifically, the SJSU program of study.
5. Three letters of recommendation.
6. Resume.
7. Documentation of 20 hours of observation in an audiology clinic or private practice.

Requirements for Advancement to Candidacy

Candidacy denotes that a student is fully qualified to complete the final stages of the Doctor of Audiology degree. Matriculated graduate students must submit a Petition for Advancement to Graduate Candidacy a minimum of one semester prior to graduating. General university requirements for advancement to candidacy are detailed in the Graduate Policies and Procedures section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. Successful completion of AUD 513 including passing the final written paper in this course with a grade of "B" or better, fulfills the GWAR in this program.

Requirements to Graduation

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies. Completion of the degree also requires a minimum overall GPA of 3.0.

Culminating Experience

The culminating experience will be the successful defense of the student's research project during AUD 598A.

Doctorate Requirements (110 units)

- AUD 501 - Acoustics and Instrumentation 3 *unit(s)*
- AUD 502 - Anatomy and Physiology 3 *unit(s)*
- AUD 503 - Psychoacoustics 3 *unit(s)*
- AUD 504 - Audiological Assessment I 3 *unit(s)*
- AUD 505A - Professional Issues I 3 *unit(s)*
- AUD 505B - Professional Issues II 3 *unit(s)*
- AUD 505C - Professional Issues III 3 *unit(s)*
- AUD 505D - Professional Issues IV 2 *unit(s)*
- AUD 505E - Professional Issues V 3 *unit(s)*
- AUD 506 - Anatomy and Physiology of the Central Auditory Nervous System (CANS) 3 *unit(s)*
- AUD 507 - Hearing Aids I 3 *unit(s)*
- AUD 508 - Audiological Assessment II 3 *unit(s)*
- AUD 509 - Practicum in Audiology 3 *unit(s)* (6 units required)
- AUD 510A - Clinical Rotation in Audiology I 3 *unit(s)*
- AUD 510B - Clinical Rotation in Audiology II 3 *unit(s)*
- AUD 510C - Clinical Rotation in Audiology III 3 *unit(s)*
- AUD 510D - Clinical Rotation in Audiology IV 3 *unit(s)*
- AUD 510E - Clinical Rotation in Audiology V 3 *unit(s)*
- AUD 510F - Clinical Rotation in Audiology VI 3 *unit(s)*
- AUD 511 - Pediatric Audiology 3 *unit(s)*
- AUD 512 - Pediatric Auditory Habilitation 3 *unit(s)*
- AUD 513 - Research Methods 3 *unit(s)* (GWAR)
- AUD 514 - Audiological Assessment III 3 *unit(s)*
- AUD 515 - Hearing Aids II 3 *unit(s)*
- AUD 516 - Adult Auditory Rehabilitation 3 *unit(s)*
- AUD 517 - Audiological Assessment IV 3 *unit(s)*
- AUD 518 - Hearing Conservation 3 *unit(s)*
- AUD 519 - Hearing Aids III 3 *unit(s)*
- AUD 521 - Medical Audiology 3 *unit(s)*
- AUD 522 - Tinnitus 2 *unit(s)*
- AUD 523 - Pharmacology 1 *unit(s)*
- AUD 524 - Speech Perception and Language Development 3 *unit(s)*
- AUD 525 - Genetics 1 *unit(s)*
- AUD 526A - Clinical Externship in Audiology I 3 *unit(s)*
- AUD 526B - Clinical Externship in Audiology II 3 *unit(s)*
- AUD 598A - Research Project 2 *unit(s)* (8 units required)

Total Units Required (110 units)

Nursing Practice, DNP

DNP Program Coordinator and Advisor: Dr. Robin Whitney.

- Admission Requirements
- University Admissions
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Program Learning Outcomes

The Doctor of Nursing Practice (DNP) is a practice degree program designed to prepare nurses at a doctoral level to lead health care change, serve as nursing faculty, and advance healthcare throughout California. The DNP program prepares nurse leaders and advanced practice nurses for evidence-based practice in patient care, leadership, and educational roles. Graduates are also prepared to serve as clinical faculty in postsecondary nursing education programs. The curriculum is based on the American Association of Colleges of Nursing's The Essentials of Doctoral Education for Advanced Nursing Practice (2006) and meets all requirements for national accreditation.

Designed for working professionals, coursework is offered primarily in an online format with intensive sessions held on-site at the San José State University campus at the beginning of each academic year. Our graduates will serve as stewards of the nursing discipline and work collaboratively with other disciplines to improve the health and health care systems of our community.

See the The Valley Foundation School of Nursing website for more information.

Admission Requirements

Prior to applying to the University, students should refer to The Valley Foundation School of Nursing website for information regarding advisement for entry into the DNP degree program. The DNP is a five-semester, 39-unit program that can be completed in 23 months of full-time study. It follows the cohort model, and there is no part-time option. It requires 1,000 hours of post-baccalaureate clinical practice. Applications open in the fall for admission in the following Fall semester.

The Valley Foundation School of Nursing uses the Cal State Apply for submission of applications to the Doctor of Nursing Practice (DNP) program.

1. Applicants require a(n): MSN from an accredited institution or a master's degree in a health-related field with additional post-baccalaureate courses in nursing theories, research methods, transcultural nursing and informatics.
2. Overall GPA of 3.0 or better.
3. Current, unrestricted California RN license.
4. National Certification in a nursing area or specialty.
5. Preparation and experience as an APN, administrator, or educator.

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. See the GAPE Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Application Procedures.

Requirements for Admission to Classified Standing

Applicants to the DNP program may be fully admitted in Classified status if they meet the admissions requirements for the University and the department. The minimum requirements for admission to the program are as follows:

1. MSN from an accredited institution or a master's degree in a health-related field with additional post-baccalaureate courses in nursing theories, research methods, transcultural nursing and informatics.
2. Overall GPA of 3.0 or better.
3. Current, unrestricted California RN license.
4. National Certification in a nursing area or specialty.
5. Preparation and experience as an APN, administrator, or educator.

All prospective students must also submit the following application materials to Cal State Apply:

1. California RN License. Applicants must upload a copy (front and back) of a current and unrestricted RN license. Upload under "License".
2. Personal Statement. Upload a personal statement outlining your goals as a Doctor of Nursing Practice. Include your intended topic or area of interest for your doctoral project (evidence-based practice, quality improvement, program evaluation) and goals for improved practice. Statements should be typed, in Times New Roman font, double-spaced, and no longer than two pages. Upload under "Personal Statement".
3. CV/Resume. Upload a copy of your current CV or resume. Upload under "CV/Resume".
4. United States Veterans. If you are a U.S. Veteran please upload documentation. One seat is available each semester for veterans meeting application criteria. Upload under "Military Papers".
5. National Certification (if applicable). National certification in a specialty field is a requirement for graduation but NOT for admission. However, if you are currently nationally certified, upload a copy under "Certification".
6. Writing Sample. Upload an example of a scholarly paper you wrote in a prior course of study or a published manuscript. The example should include citations of scholarly research and proper use of a reference and citation format, grammar, punctuation, and style.
7. Verification of Master's program clinical hours. Upload a letter from the university's program director or registrar that verifies the number of clinical hours that were completed within the Master's program. Upload the letter under "Other". Alternatively, clinical hours can be calculated based upon a formula that multiplies the semester or quarter hours by the number of units completed for transcript courses labeled as residency courses.

Conditionally Classified Standing

Applicants may be conditionally admitted (admitted with conditions) if they meet the admission requirements for the Graduate Division but do not fully meet departmental admissions requirements. The individual admission notification will explain the required terms and conditions for attaining Classified standing.

Requirements for Advancement to Candidacy

Candidacy denotes that a student is fully qualified to complete the final stages of the Doctor of Nursing Practice degree. Matriculated graduate students must submit a Petition for Advancement to Graduate Candidacy a minimum of one semester prior to graduating. General university requirements for advancement to candidacy are detailed in the Graduate Policies and Procedures section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Completion of the degree also requires a minimum overall GPA of 3.0.

Practicum Requirement

Practice Experiences in the Curriculum (AACN Essentials, 2006). DNP programs provide rich and varied opportunities for practice experiences aimed at helping graduates achieve the essential and specialty competencies upon completion of the program. In order to achieve the DNP competencies, programs include a minimum of 270 hours as part of a supervised academic program. DNP students must complete a total of 1,000 post-baccalaureate hours (inclusive of hours completed in the student's Master's program) to be eligible for the DNP degree.

Practice experiences are designed to help students achieve specific learning outcomes related to the DNP Essentials and specialty competencies. These experiences are designed to provide systematic opportunities for feedback and reflection. Experiences include in-depth work with experts from nursing as well as other disciplines and provide opportunities for meaningful student engagement within practice environments. Given the intense practice focus of DNP programs, practice experiences are designed to help students build and assimilate knowledge for advanced specialty practice at a high level of complexity. Therefore, end-of-program practice immersion experiences should be required to provide an opportunity for further synthesis and expansion of the learning developed to that point. These experiences also provide the context within which the final DNP product is completed.

Practice immersion experiences afford the opportunity to integrate and synthesize the essentials and special requirements necessary to demonstrate competency in an area of specialized nursing practice. Proficiency may be acquired through a variety of methods, including attaining case requirements, patient or practice contact hours, completing specified procedures, demonstrating experiential competencies, or a combination of these elements. Students who do not have 1,000 hours of eligible post-baccalaureate practice experience complete this requirement through the NURS 580 - DNP Practicum. Units are contingent on hours required. Note that all students are required to perform 270 hours (one semester) of practice experience during the DNP program. These hours are performed in conjunction with the doctoral project.

For more information, see Practice Experiences in the Curriculum (AACN Essentials, 2006).

Culminating Experience

Plan B (Project)

All students must complete a doctoral project prior to the conferral of the doctoral degree. The doctoral project requires enrollment in the NURS 595A, NURS 595B, and NURS 595C over consecutive semesters. Each student must form a Doctoral Project Committee comprised of one faculty member and two additional faculty or clinical professionals. The project committee chair shall be a tenured or tenure-track nursing program faculty member. Qualified individuals whose expertise is germane to the topic may be members of the Doctoral Project Committee pending approval of the committee chair and the student's program advisor. All students are required to perform 270 hours (one semester) of practice experience in conjunction with the doctoral project. (See the Culminating Experience page for a more detailed discussion of the meaning of Plan B.)

The doctoral project shall be the written product of systematic, rigorous scholarship related to advanced nursing practice and focused on a potential or existing health problem or issue affecting a group or community, rather than an individual. The doctoral project will conform to the following criteria: It shall identify the clinical problem and question(s), state the major theoretical perspectives, explain the significance of the undertaking, relate it to relevant, scholarly and professional literature, set forth the appropriate sources for and methods of gathering and analyzing the data, and offer a conclusion or recommendation. Students must conduct the project according to ethical principles and present it in an oral defense to the project committee in a public forum

Doctorate Requirements (39 units)

Core Courses (27 units)

Semester 1

- NURS 574 - The Role of Diversity and Social Issues in Healthcare 2 *unit(s)*
- NURS 575 - Application of Theories in Advanced Nursing Practice 2 *unit(s)*
- NURS 583 - Leadership and Professional Responsibility in Complex Healthcare Systems 2 *unit(s)*

Semester 2

- NURS 585 - Foundations of Evidence-Based Practice 3 *unit(s)* (GWAR)
- NURS 576 - Application of Biostatistics to Populations 3 *unit(s)*
- NURS 587 - Principles of Epidemiology 3 *unit(s)*

Semester 3

- NURS 593 - Project Management and Finance 2 *unit(s)*
- NURS 584 - Technology, Informatics, and Data Management in the Transformation of Healthcare 2 *unit(s)*

Semester 4

- NURS 591 - Instructional Design and Curriculum Development 3 *unit(s)*
- NURS 592 - Outcomes Evaluation in Practice and Education 3 *unit(s)*

Semester 5

- NURS 586 - Transformation of Health Care Systems: Health Policy and Economics 2 *unit(s)*

Practicum (6 units)

1,000 hours total, can count prior field work hours. Students may have to take additional course units to earn total hours required.

Semesters 2-5

- NURS 580 - DNP Practicum 6 *unit(s)* (*Will be completed four times for a total of 24 units*)

Culminating Experience (6 units)

Semester 3

- NURS 595A - Translating Evidence into Reflective Practice I 2 *unit(s)*

Semester 4

- NURS 595B - Translating Evidence into Reflective Practice II 2 *unit(s)*

Semester 5

- NURS 595C - Translating Evidence into Reflective Practice III Doctoral Project 2 *unit(s)*
- Oral Defense
- Journal Article Submission

Optional Elective (0-2 units)

Optional 2-unit course recommended for students interested in pursuing educational roles

Semester 5

- NURS 594 - Application of Evidence-Based Teaching in Nursing 2 *unit(s)*

Total Units Required (39 units)

Elective courses must be planned in consultation with the Graduate Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Occupational Therapy Doctorate, OTD

- Program Learning Outcomes
- Admissions Requirements
- Candidacy Requirements
- Graduation Requirements
- Doctorate Requirements (112 units)

The first cohort of students were accepted into the Occupational Therapy Doctorate (OTD) program in Spring 2023. The OTD program has full WSCUC approval and is awaiting approval by the Accreditation Council for Occupational Therapy Education (ACOTE). Final review and approval will be provided by ACOTE, located at 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929. ACOTE's telephone number is (301) 652-6611. See the department website for more information:

The OTD program uses a cohort model where students are admitted and progress through a sequenced program of study in an organized manner to support completion of the degree within three years of full time enrollment. This model fosters collaboration between students and faculty. The OTD degree is designed to prepare the student as an entry-level occupational therapist and seeks to support students as leaders and practitioner-scholars. The curriculum is designed using a variety of instructional methods to enhance content mastery. Although the majority of instruction will be face to face instruction, classes will include simulations, case presentations, involvement with the on campus faculty-run clinics and online instruction.

Admissions Requirements

University Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. See the Graduate Admissions website and this catalog for general information about Graduate Admissions at SJSU. Applicants apply separately to the department to obtain admission into the OTD degree program. Applicants must also apply to the Occupational Therapy Centralized Application Service (OTCAS). Refer to the Occupational Therapy Department website for specific information on the submission process.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the **English Language Proficiency Requirement** in this Catalog.

Program Requirements

Requirements for admission shall apply to all OTD applicants and shall include, at minimum, the following:

- a. The applicant holds a baccalaureate degree earned at an institution accredited by a regional accrediting association, or the applicant has completed equivalent academic preparation as determined by the appropriate campus authority.
- b. A minimum GPA of 3.0 (on a 4.0 scale) in the last 60 semester or 90 quarter units **is required**. A 3.2 GPA is preferred.
- c. The applicant has demonstrated sufficient preparation to successfully undertake the coursework and clinical education required to practice as an occupational therapist. Evidence considered in the admission process shall include, but not be limited to:
 - i. Graduate Record Examination (GRE) scores taken within five years of application.
 - ii. An applicant-authored statement of purpose reflecting a commitment to occupational therapy, including applicant's preparation for training in this profession, aptitude and motivation, commitment to working with diverse populations and the basis for interest in occupational therapy.
 - iii. Letters of recommendation are required and a personal interview may be included.
- d. The applicant has met any additional requirements established by the chancellor in consultation with the faculty and any additional requirements prescribed by the appropriate campus authority
- e. To enter the OTD program at SJSU, the applicant must successfully complete the following prerequisites with a grade of "B" or better:
 - i. Statistics course completed within the past 7 years
 - ii. Human Anatomy with a lab (completed within the past 7 years)
 - iii. Physiology with a lab
 - iv. Neuroanatomy
 - v. General Psychology
 - vi. Abnormal Psychology
 - vii. Sociology OR Cultural Anthropology
 - viii. Skills course where the student is engaged in working with materials with their hands to produce an end product such as ceramics, sculpture, glass blowing, etc.
- f. Students may petition to have classes completed at another institution accepted for credit at SJSU but per Executive Order a minimum of 65% of semester units must be completed in residency.

Candidacy Requirements

Candidacy denotes that a student is fully qualified to complete the final stages of the Occupational Therapy degree. Matriculated graduate students must submit a Petition for Advancement to Graduate Candidacy a minimum of one semester prior to graduating. General university requirements for advancement to candidacy are detailed in the General Graduate Policies & Procedures section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Successful completion of OCTH 245 with a grade of "B" or better on the literature review satisfies the GWAR requirement.

Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the General Graduate Policies & Procedures section of the catalog. Completion of the degree also requires a minimum overall GPA of 3.0 and satisfying the Graduation Writing Assessment Requirement (GWAR).

Doctorate Requirements (112 units)

- OCTH 201A - Field Work Experience 3-6 *unit(s)* (6 units required)
- OCTH 201B - Advanced Field Work Experience 3-6 *unit(s)* (6 units required)

- OCTH 206D - Clinical Practice Skills for Occupational Therapy 3 *unit(s)*
- OCTH 210D - Seminar in Occupational Therapy 2-3 *unit(s)* **OR** OCTH 210ITL - Seminar in Occupational Therapy: International Experience 2-3 *unit(s)* (3 *units* required)
- OCTH 211D - Historical and Theoretical Foundations of Occupational Therapy 3 *unit(s)*
- OCTH 212D - Occupations through the Lifespan 3 *unit(s)*
- OCTH 221D - Occupational Analysis 3 *unit(s)*
- OCTH 222D - Functional Kinesiology for Occupational Therapists 3 *unit(s)*
- OCTH 245D - Introduction to Research Methods 3 *unit(s)* (GWAR)
- OCTH 276D - Practicum and Seminar 1A 3 *unit(s)*
- OCTH 286D - Practicum and Seminar 1B 4 *unit(s)*
- OCTH 505 - Occupational Therapy Doctorate Exploration I 1 *unit(s)*
- OCTH 515 - Occupational Therapy Doctorate Exploration II 2 *unit(s)*
- OCTH 516 - Evaluations in Occupational Therapy 3 *unit(s)*
- OCTH 524 - Occupational Therapy Practice in the Community 2 *unit(s)*
- OCTH 525 - OTD Exploration III 3 *unit(s)*
- OCTH 526 - Occupational Therapy with Children 3 *unit(s)*
- OCTH 533 - Professional Development - Leadership 3 *unit(s)*
- OCTH 534 - Community and Population Health 3 *unit(s)*
- OCTH 536 - Occupational Therapy with Youth 3 *unit(s)*
- OCTH 543 - Professional Development - Teaching, Learning, and Service 3 *unit(s)*
- OCTH 546 - Occupational Therapy for Young Adults 3 *unit(s)*
- OCTH 553 - Professional Development - Management 3 *unit(s)*
- OCTH 555 - Qualitative Research Methods in Occupational Therapy 3 *unit(s)*
- OCTH 556 - Occupational Therapy with Middle Aged Adults 3 *unit(s)*
- OCTH 565 - Quantitative Research Methods in Occupational Therapy 3 *unit(s)*
- OCTH 566 - Occupational Therapy for Older Adults 3 *unit(s)*
- OCTH 575 - Advanced Research Methods and Data Analysis 2 *unit(s)*
- OCTH 576 - Seminar in Professional Practice 3 *unit(s)*
- OCTH 585 - Evidence-Based Practice 3 *unit(s)*
- OCTH 586 - Advanced Occupational Therapy Practice in Mental Health 3 *unit(s)*
- OCTH 595 - Doctoral Capstone Project 3 *unit(s)*
- OCTH 591A - Capstone Experience 1 3 *unit(s)*
- OCTH 591B - Capstone Experience 2 11 *unit(s)*

Total Units Required (112 units)

Advanced Certificate(s)

Advanced Social Work Practice in Gerontology Certificate

The Certificate in Advanced Social Work Practice in Gerontology offers the opportunity to focus and build on developing advanced practice knowledge and skills relevant to social work practice with older adults. The coursework and field internship are to be completed in the Advanced year of the MSW program. Students can indicate their interest in participating in the Certificate program to the Graduate Student Advisors at any point from admission to the MSW program to prior to starting their planning for Advanced year courses. Currently, this certificate is only available to SJSU Master in Social Work students.

Certificate Prerequisites

All MSW Foundation year courses are to be completed prior to moving on to the Advanced year courses for the Certificate.

- Students in the regular 2-year program complete 32 units in the first year; Students in the Advanced Standing Program complete 9 units of summer bridge courses prior to starting the Advanced year in the fall.

Certificate Requirements (12 units)

The minimum passing grade for SCWK 250 & SCWK 251 is a "B" and a grade of "CR" for SCWK 233 and 298B in order to obtain the Certificate.

- SCWK 251 - Social Work in Health and Aging 3 *unit(s)*
- SCWK 250 - Policy Practice in Health and Aging 3 *unit(s)*
- SCWK 233 - Social Work Practicum IV 1-6 *unit(s)* (3 units required)
- SCWK 298B - Special Study B 1-4 *unit(s)* (3 units required)

Total Units Required (12 units)

Advanced Social Work Practice in Mental Health Certificate

The Certificate in Advanced Social Work Practice in Mental Health offers the opportunity to focus and build on developing advanced practice knowledge and skills relevant to social work practice in mental health settings. The coursework and field internship are to be completed in the Advanced year of the MSW program. Students can indicate their interest in participating in the Certificate program to the Graduate Student Advisors at any point from admission to the MSW program to prior to starting their planning for Advanced year courses. Currently, this certificate is only available to SJSU Master in Social Work students.

Certificate Prerequisites

All MSW Foundation year courses are to be completed prior to moving on to the Advanced year courses for the Certificate.

- Students in the regular 2-year program complete 32 units in the first year; Students in the Advanced Standing Program complete 9 units of summer bridge courses prior to starting the Advanced year in the fall.

Certificate Requirements (12 units)

The minimum passing grade for SCWK 280 & SCWK 281 is a "B" and a grade of "CR" for SCWK 233 and 298B in order to obtain the Certificate.

- SCWK 281 - Social Work in Mental Health 3 *unit(s)*
- SCWK 280 - Policy Practice in Mental Health 3 *unit(s)*
- SCWK 233 - Social Work Practicum IV 1-6 *unit(s)* (3 units required)
- SCWK 298B - Special Study B 1-4 *unit(s)* (3 units required)

Total Units Required (12 units)

Mindfulness-Based Health and Human Services Certificate

This program, offered by the Department of Occupational Therapy, provides practitioners of healthcare and human services the opportunity to develop, experience, and practice their profession through a mindfulness-based practice model and lens. The program provides curricular opportunities to build essential skills for developing mindfulness-based practices. Developing skillful and steadfast mindful self-care and compassion in the midst of our complex work is the primary focus of this training program. From this embodied experience of the mindfulness-based lens, the program will provide guidance and mentorship to appropriately integrate mindfulness into your work.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

Certificate Prerequisites

Mindfulness-Based Stress Reduction (MBSR) Course, 8-week (9-10 session [2.5 to 3 hours per week] with All-Day Retreat Session) and proof of license as healthcare or human services professional from an accredited institution.

Required Courses (9 units)

- OCTH 205 - Mindfulness of Self in Daily Life 3 *unit(s)*
- OCTH 207 - Mindfulness and Quality of Participation in Daily Occupations 2 *unit(s)*
- OCTH 225 - Capstone Evidence-Based MBHHS Practice Project 3 *unit(s)*

Total Units Required (9 units)

Nursing Specialty Advanced Certificate

Certificate(s) Program Coordinator and Advisor: Dr. Vivian Wong.

The Valley Foundation School of Nursing offers a Nursing Specialty Advanced Certificate program for registered nurses graduated with at least a baccalaureate degree. The program allows students to choose from one or more of the following courses: wound, ostomy, and foot and nail. If students are taking only one course, they will be eligible to receive academic credits. However, if they are taking at least two courses, they will be eligible to receive an advanced academic certificate.

Each course in the Nursing Specialty Advanced Certificate consists of both didactic and practicum components, incorporating interactive lectures, discussions, and skills practice in the instructional design. The didactic portion of each course is five weeks in duration and consists of approximately 40 hours of online instruction and 20 hours of onsite instruction. Interactive classes in 3-hour blocks are conducted online via Zoom throughout each of the five-week courses. Canvas is the learning platform for instructional materials and exams. The two onsite days for each specialty are designed for skills demonstration and practice, guest lectures, and vendor exhibition. Each onsite day is an immersive 10-hour learning experience. The total didactic hours include: orientation (2-hour online class), 13 3-hour online classes, and 20 hours of onsite classes (two 10-hour days). The didactic component is equivalent to a 4-unit lecture course.

Students will be assigned to designated preceptors if they take the practicum in the Bay Area or in limited regions outside the Bay Area. Students who wish to take the practicum outside of our contracted agencies will have to locate their own preceptors. Preceptors must meet the criteria set by the Wound, Ostomy, and Continence Nurses Society™ (WOCN®) accreditation committee, and the respective agencies will be required to establish a contract agreement with our university before the practicum can begin. Students should complete a minimum of 45 hours in practicum (five hours of orientation/preceptor conference and 40 hours in preceptorship). The practicum component is equivalent to a one unit off-campus course. The total number of instructional hours (online didactic, onsite didactic, and practicum) is 100 hours, which is equivalent to a 5-unit course (4-unit didactic and 1-unit practicum). Students are required to achieve a final score of at least 80% on the didactic component and a passing credit in practicum to complete each course.

Students will be receiving five units of academic credits for each course. There will be no continuing education contact hours offered. With the certificate of completion or transcript of the academic credits, registered nurses can take the WOCN-Certification Board exams in wound care, ostomy care, and/or foot and nail care. For master's prepared nurses, they may take the Advanced Practice (AP) certification in the selected specialty.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate

may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (10-15 units)

Complete at least two courses.

- NURS 205F - Foot and Nail Care 5 *unit(s)*
- NURS 205O - Ostomy Care 5 *unit(s)*
- NURS 205W - Wound Care 5 *unit(s)*

Total Units Required (10-15 units)

Credential(s)

Credentials are primarily granted by the California Commission on Teaching Credentialing. This excludes the Credential in Spanish Language Counseling.

Credential in Spanish Language Counseling

A Credential in Spanish Language Counseling, offered by the School of Social Work, is available to students who, through coursework or examination, show evidence of competency to conduct counseling/ therapy in Spanish.

This credential is for BASW and MSW students demonstrating advanced levels of Spanish language proficiency and social work practice skills. There are two ways of obtaining the certificate: (1) taking SCWK 224, an elective course that uses cultural, linguistic competencies, and social work skills in the delivery of services to Latino client systems; (2) taking an exam (offered near the time of graduation). For more information, please contact socialwork@sjsu.edu.

Pupil Personnel Services (PM-PPSC) Post-Master's Credential

Post-Master's Pupil Personnel Services Credential (PM-PPSC), offered by the School of Social Work, prepares individuals already with an MSW degree to qualify to be credentialed by the State of California as school social workers. Please see the School of Social Work website for PM-PPSC program website information and application process.

Students accepted into the PM-PPSC program must take and pass the following courses offered through Special Sessions. For more information, please contact socialwork@sjsu.edu.

Credential Requirements (7-10 units)

- SCWK 263 - Social Work and the Law 3 *unit(s)*
- SCWK 272 - Social Work in Educational Settings 3 *unit(s)*
- An appropriate school-based internship approved by the Field Education program, i.e., through SCWK 230 and SCWK 231 1-4 *unit(s)*

Total Units Required (7-10 units)

Pupil Personnel Services (PPSC) Credential (Social Work)

The Pupil Personnel Services Credential (PPSC), offered by the School of Social Work, may be obtained by students who are completing the MSW degree in our program, the CBEST, and meet the PPSC program requirements. The PPSC is obtained in School Social Work and Child Welfare and Attendance. Students must accept placement in an approved PPSC program school setting for their second-year practicum.

- Students in the MSW Program must consult with the MSW Program Coordinator and Advisor prior to starting the process to earn a PPSC.
- While enrolled in the MSW Program, students wanting to earn a PPSC must take and pass the following courses:

Credential Requirements (14-16 units)

- SCWK 263 - Social Work and the Law 3 *unit(s)*
- SCWK 272 - Social Work in Educational Settings 3 *unit(s)*
- An appropriate school-based internship approved by the Field Education program, i.e., through SCWK 232 and SCWK 233 8-10 *unit(s)*

Total Units Required (14-16 units)

Added Authorization(s)

Added Authorizations are granted by the California Commission on Teaching Credentialing and extend special authorization to specific audiences.

Adapted Physical Education Added Authorization

The Adapted Physical Education Added Authorization (APEAA), offered by the Department of Kinesiology, allows an educator to provide students with disabilities a specially designed physical education program as determined by the Commission on Teacher Credentialing (CTC).

Students in the Kinesiology, Preparation for Teaching, BS major take 5 of the 6 required APEAA courses; completing these courses will help students to efficiently obtain the APEAA upon completion of their single subject PE credential. If interested in obtaining the APEAA, students should contact the program co-coordinators Dr. Jihyun Lee and Dr. Erin Siebert.

Authorization Requirements (18 units)

- KIN 107 - Adapted Aquatics 2 *unit(s)*
- KIN 108 - Adapted Physical Activity for Young Adults with Disabilities 2 *unit(s)*
- KIN 156 - Introduction to Adapted Physical Activity 3 *unit(s)*
- KIN 159 - Sport and Adapted Activities 3 *unit(s)*
- KIN 174 - Assessment of Psychomotor Function 3 *unit(s)*
- KNED 189 - Student Teaching Seminar in Adapted PE 2-5 *unit(s)* (5 *units required*)

Total Units Required (18 units)

Spartan Accelerated Graduate Education (SAGE) Scholars

Spartan Accelerated Graduate Education (SAGE) Programs programs are combined bachelor's and master's programs at SJSU (per University Policy F19-1). Sometimes they may also satisfy the requirements for a credential. Students in these programs pursue a bachelor's and master's degree simultaneously. These program allow students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

Kinesiology, Preparation for Teaching, BS + Single Subject Credential in Physical Education + Teaching, MAT

This Spartan Accelerated Graduate Education (SAGE) Scholars Program prepares students to become physical education and/or adapted physical education teachers in K-12 schools. The program allows qualified students to simultaneously complete the requirements for the Kinesiology, Preparation for Teaching, BS, Single Subject Credential - Physical Education and Teaching, MAT (with optional Spanish bilingual and Adapted Physical Education Authorizations). The BS Kinesiology, Preparation for Teaching, offered by the Department of Kinesiology, is a California Commission on Teacher Credentialing (CCTC) approved subject matter preparation program (SMPP) to attain subject matter competency (SMC). SMC is needed for entry into a physical education single subject credential program. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee. They complete all degrees in less time as compared to completing them separately.

To add a Spanish Bilingual Authorization to this pathway, students simultaneously apply to the Critical Bilingual Authorization program (CBAP). This requires an additional personal essay in their SAGE Scholars application and an interview in Spanish. CBAP students take one credential course in Spanish (EDTE 208B instead of EDTE 208) and take specified sections of several other credential courses. They do their student teaching in bilingual classrooms and are required to register for 2 seminars of EDTE 297B - Advanced Issues in Bilingual Education (2 units) during their student teaching semesters, for an additional 4 units.

The Adapted Physical Education Added Authorization (APEAA) is partially blended into the Preparation for Teaching, BS, in Kinesiology. To add the APEAA to this pathway, students need to complete an additional APE student teaching course (KNED 189). Students are eligible to take this course after they have completed all of the prerequisite APEAA courses with a B or better and have completed or are concurrently completing their PE student teaching. APEAA students are required to complete an additional 150 fieldwork hours organized by the APEAA co-coordinators in community and PK-14 settings and attend the APE seminars during their student teaching course.

Total SAGE Program Units (BS + Credential + MAT) 163

For more information, contact **SAGE Program Coordinator**: David Daum.

Admissions Requirements

Most native and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during the Spring semester of Year 3. Applications will be processed by the Department of Teacher Education and without an application fee. Students will not need to apply formally for graduate admission if accepted into this program. To be eligible:

- Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program;
- Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (GWAR) prior to admission into the program;
- Students must have a minimum 2.75 cumulative GPA at the time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher. Note that this is a higher GPA standard than other SAGE Scholars programs; and,
- Students must meet the Master of Art in Teaching and Single Subject Credential admissions requirements.

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Continuation requirements: SAGE Scholars must meet the same requirements to remain in the undergraduate and graduate programs as students in traditional pathways. Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Successfully complete 9 units of graduate coursework in the Secondary Education program;
- Maintain GPA of 3.0 or higher;
- Demonstrate aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments;
- Meet with a graduate advisor to plan a formal course of study. The MAT degree approved programs are individually designed to meet specific student objectives;
- To enter student teaching, students must have completed the Subject Matter Competency requirements (CSETs or Subject Matter Competency waiver, if applicable). CBA students must pass the CSET-LOTE prior to student teaching;
- To convert to graduate status, students must have completed their 45 hours of pre-professional service in a public school setting: 25(+) in the secondary subject area and up to 20 hours any work with youth;
- To convert to graduate status, students must have completed all *lower-division* work (including lower and upper-division general education courses and American Institutions courses); and,
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MAT degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Area B. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Graduation requirements: SAGE Scholars must meet the same undergraduate graduation requirements as Kinesiology, Preparation for Teaching majors, including University and GE requirements, to be conferred the BS. As graduate students, SAGE Scholars must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (163 units)

Kinesiology, Preparation for Teaching, BS (117 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Major-Specific Graduation Requirements: Students in this major must complete all courses Major Preparation and Requirements with a "C- or better" to graduate. The following course in Major Preparation must be passed with a "C or better": KIN 100W.

Adapted Physical Education Added Authorization: The Adapted Physical Education Added Authorization (APEAA) allows an educator to provide students with disabilities a specially designed physical education program as determined by the Commission on Teacher Credentialing (CTC). Students in the Kinesiology, Preparation for Teaching major take 5 of the 6 required APEAA courses; completing these courses will help students to efficiently obtain the APEAA upon completion of their single subject PE credential. If interested in obtaining the APEAA, students should contact the program co-coordinators Dr. Jihyun Lee and Dr. Erin Siebert.

University Requirements (41 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass KIN 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A, C, D/American Institutions (US123), E, F, R, S, V 39 *unit(s)*
- Physical Education 2 *unit(s)*

Major Preparation (18 units)

- BIOL 65 - Human Anatomy 4 *unit(s)* (B2+B3) (BIOL 65O may also be used to meet this requirement. This course does not include a human cadaver lab.)
- BIOL 66 - Human Physiology 5 *unit(s)* (B2+B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- KIN 100W - Writing Workshop 3 *unit(s)* (WID)
- Mathematics/Quantitative Reasoning 3 *unit(s)* (Area B4)

Major Requirements (58 units)

Core Courses

- KIN 70 - Introduction to Kinesiology 3 *unit(s)*
- KIN 155 - Exercise Physiology 3 *unit(s)*
- KIN 158 - Biomechanics 3 *unit(s)*
- KIN 175 - Measurement and Evaluation in Kinesiology 3 *unit(s)*
- KIN 185 - Senior Seminar 1 *unit(s)*
- Six activity courses from at least four different movement areas (*in addition to 2 units of the Undergraduate Graduation Requirement*) 6 *unit(s)*
- KIN 160 - History of Sport and Physical Education **OR** KIN 161 - Philosophical Perspectives of Sport **OR** KIN 164 - Sociocultural Perspectives 3 *unit(s)*
- KIN 165 - Motor Development 3 *unit(s)*

Major Required Courses

- KIN 105 - Water Safety Instructor's Course 2 *unit(s)* (*Age Requirement: minimum of 18 years*)
- KIN 107 - Adapted Aquatics 2 *unit(s)*
- KIN 108 - Adapted Physical Activity for Young Adults with Disabilities 2 *unit(s)*
- KIN 156 - Introduction to Adapted Physical Activity 3 *unit(s)*
- KIN 159 - Sport and Adapted Activities 3 *unit(s)*
- KIN 172 - Elementary School Programs, K-6 3 *unit(s)* (*spring only*) (*includes 20 hours pre-professional hours*)
- KIN 173 - Introduction to Teaching Physical Education and Non-Traditional Sports 3 *unit(s)* (*fall only*)
- KIN 174 - Assessment of Psychomotor Function 3 *unit(s)*
- KIN 178 - Management Practices for Physical Education Teachers 3 *unit(s)* (*fall only*) (*includes 20 hours pre-professional hours*)
- KIN 179 - Design and Assessment of Movement Experiences 3 *unit(s)* (*spring only*)
- KIN 166 - Motor Learning 3 *unit(s)*
- KIN 167 - Sports Psychology 3 *unit(s)* **OR** KIN 168 - Psychology of Coaching 3 *unit(s)* **OR** KIN 176 - Exercise Psychology 3 *unit(s)*

Teaching, MAT + Single Subject Credential in Physical Education (46 units)

Upon completion of the MAT and credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in order to be recommended for a credential. Completion of the MAT also requires a minimum grade of "C" in all courses taken and a minimum overall GPA of 3.0.

Spanish Bilingual Authorization: Complete student teaching (EDSC 184X/SSED 184Y/SSED 184Z) in Spanish bilingual classrooms and attend an extra seminar session in these student teaching classes; and take the three advisor designated courses in Spanish.

Adapted Physical Education Added Authorization (APEAA): Complete APE student teaching (KNED 189) in PK-14 settings and attend APE seminar sessions as a part of the student teaching class. Completion of the APEAA also requires a minimum grade of "B" in all prerequisite courses.

- EDTE 208 - Educational Sociology 3 *unit(s)*
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)* (*Multicultural Foundations*) (*EDSC 173 also accepted*)
- EDTE 250 - Qualitative Research in Education 3 *unit(s)* (*Research Core*) (*GWAR*)
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- EDTE 297C - CalTPA Support 1 *unit(s)*
- KNED 339 - Instructional Materials and Procedures in Physical Education 3 *unit(s)*
- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)* (*6 units required*)
- KNED 184Y - Student Teaching II: Classroom Teaching 4 *unit(s)*
- KNED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*

Culminating Experience (6 units)

Students must satisfy the culminating experience requirement by completing Plan A (Thesis) or Plan B (Project), and a **presentation on the same at the department's colloquium**, which is held near the end of each fall and spring semester.

Plan A (Thesis): Write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. Thesis proposals must be approved by the graduate committee, which is made up of two department faculty and a third faculty member from outside the department. Students enroll in:

- EDTE 299 - Master's Thesis

Plan B (Project): Complete a master's project report. A project is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized in a report that includes the project's significance, objectives, methodology and a conclusion or recommendation. Students enroll in:

- EDTE 298 - Special Studies in Education

Total Units Required (163 units)

Note: The standalone Kinesiology, Preparation for Teaching, BS program requires the completion of 3 units of Guided Elective. Students satisfy this requirement in this SAGE Scholars Program by completing KNED 339. These 3 units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the 120-unit minimum for the bachelor's degree.

Nutritional Science, Applied Nutrition and Food Sciences Concentration, BS + Nutritional Science MS

The Nutritional Science Spartan Accelerated Graduate Education (SAGE) Scholars Program is designed to meet the needs of the student who is working towards a baccalaureate degree and seeks advanced preparation in nutrition science, nutrition education, geriatric nutrition, and foodservice/restaurant management. The program is intended to prepare candidates to assume leadership roles in their profession and communities and to provide the opportunity to acquire a foundation for doctoral study.

Our Nutritional Science MS graduates have earned doctorates, become college and university faculty, been employed in private, federal, and state research institutions, and have established their own private practice or consulting business.

The Nutritional Science SAGE Program enables qualified students in the Bachelor of Science in Nutritional Science program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BS + MS) 141

For more information, contact the **SAGE Scholars Program Coordinator** Dr. Xi Feng.

Admissions Requirements

1. Be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (100W/GWAR) prior to admission into the SAGE Scholars program);
2. Successfully completed a minimum of 60 Nutritional Science BS applicable units and not more than 120 undergraduate degree applicable units at the time of admission in the program;

3. Completed NUFS 106A and NUFS 100W with grades of "C" or better;
4. Minimum 3.0 cumulative SJSU GPA at time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's SJSU cumulative GPA, whichever is higher; and,
5. Completed all lower-division work (designated 1-99, including lower-division general education courses and American Institutions courses).

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

1. Students must maintain a GPA of 3.0 or higher. Students in the first four years of the program who do not maintain these standards will be withdrawn from the SAGE Scholars program and returned to the non-SAGE BS in Nutritional Science program.
2. Students may apply for the master's program at that point like any other non-SAGE Scholars applicant.
3. Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Area B and SJSU Studies Area S. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units unless they are listed in the University Electives section of the major.

Program Requirements (141 units)

Nutritional Science, Applied Nutrition and Food Sciences Concentration (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (32 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass NUFS 100W or PH 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A, C, D/American Institutions (US123), F, and SJSU Studies Area R or V (30 units)
- Physical Education (2 units)

Major Preparation (19 units)

- BIOL 66 - Human Physiology 5 unit(s) (B2+B3)
- CHEM 1A - General Chemistry 5 unit(s) (B1+B3)
- CHEM 30B - Introductory Chemistry 3 unit(s)
- NUFS 100W - Writing Workshop 3 unit(s) (WID)

Complete one course:

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)
- PH 67 - Introductory Health Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (66 units)

Major Core (34 units)

- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 20 - Sanitation and Environmental Issues in the Hospitality Industry 2 *unit(s)*
- NUFS 31 - Professionalism in Nutrition, Food Science and Packaging 1 *unit(s)*
- NUFS 101A - Food Science 4 *unit(s)*
- NUFS 103 - Food Processing and Packaging I 2 *unit(s)*
- NUFS 106A - Human Nutrition in the Life Span 3 *unit(s)*
- NUFS 106B - Research Methodology in Nutrition and Food Science 3 *unit(s)*
- NUFS 111 - Foodservice Production Management 3 *unit(s)*
- NUFS 134 - Multicultural Complementary and Alternative Medicine 3 *unit(s)* (S)
- NUFS 151 - Food Microbiology 2 *unit(s)*
- NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology 1-6 *unit(s)*
- PKG 107 - Principles of Packaging 3 *unit(s)*

Complete one course:

- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (V)

Applied Nutrition and Food Sciences Concentration (32 units)

Complete 32 units from:

- CHEM 132 - Introductory Biochemistry 4 *unit(s)*
- CHEM 132L - Introductory Biochemistry Lab 1 *unit(s)*
- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (D)
- KIN 155 - Exercise Physiology 3 *unit(s)*
- NUFS 10 - Basic Life Skills 3 *unit(s)* (E)
- NUFS 21 - Culinary Principles and Practice 3 *unit(s)*
- NUFS 22 - Catering and Beverage Management 3 *unit(s)*
- NUFS 103L - Food Processing Laboratory 1 *unit(s)*
- NUFS 104A - Cultural Aspects of Food 3 *unit(s)*
- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*
- NUFS 108A - Nutrition and Metabolism 3 *unit(s)*
- NUFS 114A - Community Nutrition for Majors 3 *unit(s)*
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS 117 - Food Evaluation Techniques 3 *unit(s)*
- NUFS 118 - Food Chemistry 3 *unit(s)*
- NUFS 122 - Chemical Analysis of Food 3 *unit(s)*
- NUFS 123 - Nutrition for Sport 3 *unit(s)*

- NUFS 124 - Disordered Eating and Nutrition Therapy 3 *unit(s)*
- NUFS 150 - Food and Nutritional Toxicology 2 *unit(s)*
- NUFS 180 - Individual Studies 1-6 *unit(s)*
- NUFS 190 - Nutrition Education and Counseling 3 *unit(s)*
- NUFS 194 - Entrepreneurial Nutrition 1 *unit(s)*
- SPAN 1A - Elementary Spanish 4 *unit(s)* **OR** SPAN 4A - Basic Spanish I 4 *unit(s)* (or by advertisement)

University Electives (3 units)

Nutritional Science, MS (21 units)

Core Courses (18 units)

- NUFS 201 - Colloquium in Nutrition, Food Science and Packaging 3 *unit(s)*
- NUFS 217 - Issues in Nutrition, Food and Packaging 3 *unit(s)* (GWAR)
- NUFS 257 - Biostatistics in Research 3 *unit(s)*
- NUFS 295A - Research Methodology 3 *unit(s)*

Complete two courses:

- NUFS 219A - Advanced Nutrition and Metabolism 3 *unit(s)*
- NUFS 219B - Seminar in Advanced Topics in Human Nutrition & Dietetics 3 *unit(s)*
- NUFS 220A - Advanced Medical Nutrition Therapy 3 *unit(s)*
- NUFS 242 - Advanced Foodservice/Restaurant Management 3 *unit(s)*
- NUFS 243 - Nutrition and Dietetics Leadership 3 *unit(s)*
- NUFS 260 - Multidisciplinary Health Promotion in Later Life 3 *unit(s)*
- PKG 270 - Package Design for End Use 3 *unit(s)*

Culminating Experience (3 units)

Plan B (Project)

For this plan, the student is required to complete NUFS 298 - Special Studies in Nutrition, Food Science and Packaging and submit a written project in publication format. A bound copy of the project must be submitted to the Nutrition, Food Science and Packaging Department and to the student's project advisor.

- NUFS 298 - Special Studies in Nutrition, Food Science and Packaging 1-6 *unit(s)* (3 units required)

Total Units Required (141 units)

The standalone Nutritional Science, MS program requires 9 units of courses in a Specialization Area. Students satisfy this requirement in this SAGE Scholars Program by completing 9 units from NUFS 114A, 117, 118, 122, 123, 124, 150, and 190 in the Nutritional Science, Applied Nutrition Concentration BS program. These 9 credits are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

To support student success, the SAGE program allows for extended enrollment to accommodate unforeseen circumstances or personal commitments. Students have the option to add an additional semester to ensure they complete all program requirements.

Nutritional Science, Dietetics Concentration, BS + Nutritional Science MS

The Nutritional Science Spartan Accelerated Graduate Education (SAGE) Scholars Program is designed to meet the needs of the student who has a baccalaureate degree and seeks advanced preparation in nutrition science, nutrition education, geriatric nutrition, and foodservice/restaurant management. The program is intended to prepare candidates to assume leadership roles in their profession and communities and to provide the opportunity to acquire a foundation for doctoral study.

Our Nutritional Science, MS graduates have earned doctorates, become college and university faculty, been employed in private, federal, and state research institutions, and have established their own private practice or consulting business. In the process of fulfilling requirements for the SAGE MS degree, students who have completed the dietetics concentration will meet the academic requirements of the Academy of Nutrition and Dietetics (AND) and the Accreditation Council for Education in Nutrition and Dietetics (ACEND) toward becoming a registered dietitian.

The Nutritional Science SAGE Program enables qualified students in the Bachelor of Science in Nutritional Science program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BS + MS) 141

For more information, contact the **SAGE Scholars Program Coordinator** Dr. Xi Feng.

Admissions Requirements

1. Be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (100W/GWAR) prior to admission into the SAGE Scholars program;
2. Successfully completed a minimum of 60 Nutritional Science BS applicable units and not more than 120 undergraduate degree applicable units at the time of admission in the program;
3. Completed NUFS 106A and NUFS 100W with grades of "C" or better;
4. Minimum 3.0 cumulative SJSU GPA at time of admission;
5. Completed all lower-division work (designated 1-99, including lower-division general education courses and American Institutions courses).

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

1. Students must maintain a GPA of 3.0 or higher. Students in the first four years of the program who do not maintain these standards will be removed from the SAGE Scholars program and returned to the non-SAGE BS in Nutritional Science program. In that event, students in the dietetics concentration will be eligible for the Nutrition and Dietetic Technician Registered (NDTR) credential.
2. Students may apply for the master's program at that point like any other non-SAGE Scholars applicant.
3. Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Area B and SJSU Studies Area S. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Program Requirements (141 units)

Nutritional Science, Dietetics Concentration (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (35 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass NUFS 100W or PH 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A, C, D/American Institutions (US123), F, and SJSU Studies Area R or V (30 units)
- Physical Education (2 units)

Major Preparation (24 units)

- BIOL 66 - Human Physiology 5 unit(s) (B2+B3)
- CHEM 1A - General Chemistry 5 unit(s) (B1+B3)
- CHEM 30B - Introductory Chemistry 3 unit(s)
- CHEM 132 - Introductory Biochemistry 4 unit(s)
- CHEM 132L - Introductory Biochemistry Lab 1 unit(s)
- NUFS 100W - Writing Workshop 3 unit(s) (WID)

Complete one course:

(UNVS 15 may be used in lieu of the statistics course required by this major.)

- STAT 95 - Elementary Statistics 3 unit(s) (B4)
- PH 67 - Introductory Health Statistics 3 unit(s) (B4)

Major Requirements (61 units)

Major Core (34 units)

- NUFS 8 - Nutrition for the Health Professions 3 unit(s)
- NUFS 20 - Sanitation and Environmental Issues in the Hospitality Industry 2 unit(s)
- NUFS 31 - Professionalism in Nutrition, Food Science and Packaging 1 unit(s)
- NUFS 101A - Food Science 4 unit(s)
- NUFS 103 - Food Processing and Packaging I 2 unit(s)
- NUFS 106A - Human Nutrition in the Life Span 3 unit(s)
- NUFS 106B - Research Methodology in Nutrition and Food Science 3 unit(s)
- NUFS 111 - Foodservice Production Management 3 unit(s)
- NUFS 134 - Multicultural Complementary and Alternative Medicine 3 unit(s) (S)

- NUFS 151 - Food Microbiology 2 *unit(s)*
- NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology 1-6 *unit(s)*
- PKG 107 - Principles of Packaging 3 *unit(s)*

Complete one course:

- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (V)

Dietetics Concentration (27 units)

- NUFS 108A - Nutrition and Metabolism 3 *unit(s)*
- NUFS 109 - Advanced Nutrition 3 *unit(s)*
- NUFS 110A - Medical Nutrition Therapy 3 *unit(s)*
- NUFS 110B - Medical Nutrition Therapy 3 *unit(s)*
- NUFS 113 - Foodservice Systems: Mgmt & Proc 3 *unit(s)*
- NUFS 114A - Community Nutrition for Majors 3 *unit(s)*
- NUFS 190 - Nutrition Education and Counseling 3 *unit(s)*

Complete 6 units (or by Advisement):

- NUFS 21 - Culinary Principles and Practice 3 *unit(s)*
- NUFS 22 - Catering and Beverage Management 2 *unit(s)*
- NUFS 103L - Food Processing Laboratory 1 *unit(s)*
- NUFS 104A - Cultural Aspects of Food 3 *unit(s)*
- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS 123 - Nutrition for Sport 3 *unit(s)*
- NUFS 124 - Disordered Eating and Nutrition Therapy 3 *unit(s)*
- NUFS 180 - Individual Studies 1-6 *unit(s)*
- NUFS 194 - Entrepreneurial Nutrition 1 *unit(s)*
- SPAN 1A - Elementary Spanish 4 *unit(s)* (C2) OR SPAN 4A - Basic Spanish I 4 *unit(s)* (or by advisement)

Nutritional Science, MS (21 units)

Core Courses (18 units)

- NUFS 201 - Colloquium in Nutrition, Food Science and Packaging 3 *unit(s)*
- NUFS 217 - Issues in Nutrition, Food and Packaging 3 *unit(s)* (GWAR)
- NUFS 257 - Biostatistics in Research 3 *unit(s)*
- NUFS 295A - Research Methodology 3 *unit(s)*

Complete two courses:

- NUFS 219A - Advanced Nutrition and Metabolism
- NUFS 219B - Seminar in Advanced Topics in Human Nutrition & Dietetics
- NUFS 220A - Advanced Medical Nutrition Therapy
- NUFS 242 - Advanced Foodservice/Restaurant Management
- NUFS 243 - Nutrition and Dietetics Leadership
- NUFS 260 - Multidisciplinary Health Promotion in Later Life
- PKG 270 - Package Design for End Use

Culminating Experience (3 units)

Plan B (Project)

For this plan, the student is required to complete NUFS 298 - Special Studies in Nutrition, Food Science and Packaging and submit a written project in publication format. A bound copy of the project must be submitted to the Nutrition, Food Science and Packaging Department and to the student's project advisor.

- NUFS 298 - Special Studies in Nutrition, Food Science and Packaging 1-6 unit(s) (3 units required)

Total Units Required (141 units)

The standalone Nutritional Science, MS program requires 9 units of courses in a Specialization Area. Students satisfy this requirement in this SAGE Scholars Program by completing 9 units from NUFS 108A, NUFS 109, NUFS 110A, and NUFS 110B in the Nutritional Science, Dietetics Concentration BS program. These 9 credits are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Documentation of a minimum of 450 hours of dietetics work/volunteer experience is required before applying for the Dietetic Internship. These hours must be completed before the application semester.

NUFS 220A - Advanced Medical Nutrition Therapy is a required course for SAGE students in the Dietetics concentration who will be planning for the SJSU Dietetic Internship.

To support student success, the SAGE program allows for extended enrollment to accommodate unforeseen circumstances or personal commitments. Students have the option to add an additional semester to ensure they complete all program requirements.

Nutritional Science, Food Management Concentration, BS + Nutritional Science MS

The Nutritional Science Spartan Accelerated Graduate Education (SAGE) Scholars Program is designed to meet the needs of the student who has a baccalaureate degree and seeks advanced preparation in nutrition science, nutrition education, geriatric nutrition, and foodservice/restaurant management. The program is intended to prepare candidates to assume leadership roles in their profession and communities and to provide the opportunity to acquire a foundation for doctoral study.

Our Nutritional Science, MS graduates have earned doctorates, become college and university faculty, been employed in private, federal, and state research institutions, and have established their own private practice or consulting business.

The Nutritional Science SAGE Program enables qualified students in the Bachelor of Science in Nutritional Science program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BS + MS) 141

For more information, contact the **SAGE Scholars Program Coordinator** Dr. Xi Feng.

Admissions Requirements

1. Be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (100W/GWAR) prior to admission into the SAGE Scholars program;
2. Successfully completed a minimum of 60 Nutritional Science BS applicable units and not more than 120 undergraduate degree applicable units at the time of admission in the program;
3. Completed NUFS 106A and NUFS 100W with grades of "C" or better;
4. Minimum 3.0 cumulative SJSU GPA at time of admission;
5. Completed all lower-division work (designated 1-99, including lower-division general education courses and American Institutions courses).

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

1. Students must maintain a GPA of 3.0 or higher. Students in the first four years of the program who do not maintain these standards will be removed from the SAGE Scholars program and returned to the non-SAGE BS in Nutritional Science program.
2. Students may apply for the master's program at that point like any other non-SAGE Scholars applicant.
3. Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Area B and SJSU Studies Area S. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Program Requirements (141 units)

Nutritional Science, Food Management Concentration (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (35 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass NUFS 100W or PH 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A, C, D/American Institutions (US123), F, and SJSU Studies Area R or V (30 units)
- Physical Education (2 units)

Major Preparation (17 units)

- BIOL 66 - Human Physiology 5 *unit(s)* (B2+B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- CHEM 30B - Introductory Chemistry 3 *unit(s)*
- NUFS 100W - Writing Workshop 3 *unit(s)* (WID)

Complete one course:

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

- PH 67 - Introductory Health Statistics 3 *unit(s)* (B4)

Major Requirements (68 units)

Major Core (34 units)

- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 20 - Sanitation and Environmental Issues in the Hospitality Industry 2 *unit(s)*
- NUFS 31 - Professionalism in Nutrition, Food Science and Packaging 1 *unit(s)*
- NUFS 101A - Food Science 4 *unit(s)*
- NUFS 103 - Food Processing and Packaging I 2 *unit(s)*
- NUFS 106A - Human Nutrition in the Life Span 3 *unit(s)*
- NUFS 106B - Research Methodology in Nutrition and Food Science 3 *unit(s)*
- NUFS 111 - Foodservice Production Management 3 *unit(s)*
- NUFS 134 - Multicultural Complementary and Alternative Medicine 3 *unit(s)* (S)
- NUFS 151 - Food Microbiology 2 *unit(s)*
- NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology 1-6 *unit(s)*
- PKG 107 - Principles of Packaging 3 *unit(s)*

Complete one course:

- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (V)

Food Management Concentration (23 units)

- BUS1 20N - Survey of Accounting 3 *unit(s)*
- NUFS 21 - Culinary Principles and Practice 3 *unit(s)*
- NUFS 22 - Catering and Beverage Management 3 *unit(s)*
- NUFS 25 - Internship in Foodservice Management 1-2 *unit(s)* (2 units required)
- NUFS 104A - Cultural Aspects of Food 3 *unit(s)*
- NUFS 113 - Foodservice Systems: Mgmt & Proc 3 *unit(s)*
- NUFS 114A - Community Nutrition for Majors 3 *unit(s)*
- NUFS 190 - Nutrition Education and Counseling 3 *unit(s)*

Major Electives (11 units)

Complete 11 units from the following (or by advisement):

- NUFS 10 - Basic Life Skills 3 *unit(s)* (E)
- NUFS 103L - Food Processing Laboratory 1 *unit(s)*
- NUFS 105 - Current Issues in Nutrition 3 *unit(s)*
- NUFS 116 - Aging and Nutrition 3 *unit(s)*
- NUFS 194 - Entrepreneurial Nutrition 1 *unit(s)*
- PKG 169 - Food Packaging and Preservation 3 *unit(s)*
- SPAN 1A - Elementary Spanish 4 *unit(s)* (C2) OR SPAN 4A - Basic Spanish I 4 *unit(s)*

Nutritional Science, MS (21 units)

Core Courses (18 units)

- NUFS 201 - Colloquium in Nutrition, Food Science and Packaging 3 *unit(s)*
- NUFS 217 - Issues in Nutrition, Food and Packaging 3 *unit(s)* (GWAR)
- NUFS 257 - Biostatistics in Research 3 *unit(s)*
- NUFS 295A - Research Methodology 3 *unit(s)*

Complete two courses:

- NUFS 219A - Advanced Nutrition and Metabolism 3 *unit(s)*
- NUFS 219B - Seminar in Advanced Topics in Human Nutrition & Dietetics 3 *unit(s)*
- NUFS 220A - Advanced Medical Nutrition Therapy 3 *unit(s)*
- NUFS 242 - Advanced Foodservice/Restaurant Management 3 *unit(s)*
- NUFS 243 - Nutrition and Dietetics Leadership 3 *unit(s)*
- NUFS 260 - Multidisciplinary Health Promotion in Later Life 3 *unit(s)*
- PKG 270 - Package Design for End Use 3 *unit(s)*

Culminating Experience (3 units)

Plan B (Project) For this plan, the student is required to complete NUFS 298 - Special Studies in Nutrition, Food Science and Packaging and submit a written project in publication format. A bound copy of the project must be submitted to the Nutrition, Food Science and Packaging Department and to the student's project advisor.

- NUFS 298 - Special Studies in Nutrition, Food Science and Packaging 1-6 *unit(s)* (3 units required)

Total Units Required (141 units)

The standalone Nutritional Science, MS program requires 9 units of courses in a Specialization Area. Students satisfy this requirement in this SAGE Scholars Program by completing 9 units from NUFS 104A, 111, 113, 114A, and 190 in the Nutritional Science, Food Management Concentration BS program. These 9 credits are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

To support student success, the SAGE program allows for extended enrollment to accommodate unforeseen circumstances or personal commitments. Students have the option to add an additional semester to ensure they complete all program requirements.

Packaging, BS + Nutritional Science, MS

The Spartan Accelerated Graduate Education (SAGE) Scholars Program with a Packaging, BS and a Nutritional Science, MS with an objective in packaging is a combined bachelor's and master's program. Our program is designed to meet the needs of the student who is working towards a baccalaureate degree and seeks advanced preparation in packaging. The program is intended to prepare candidates to assume leadership roles in their profession and industry and to provide the opportunity to acquire a foundation for doctoral study in packaging or related fields.

The Packaging SAGE Program enables qualified students in the Bachelor of Science in Packaging program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BS + MS) 141

For more information, contact the **SAGE Scholars Program Coordinator**: Dr. Xi Feng.

Admissions Requirements

1. Be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (100W/GWAR) prior to admission into the SAGE Scholars program;
2. Successfully completed a minimum of 60 Packaging, BS applicable units and not more than 120 undergraduate degree applicable units at the time of admission in the program;
3. Completed PKG 141A and NUFS 100W with grades of "B" or better;
4. Minimum 3.0 cumulative SJSU GPA at time of admission;
5. Completed all lower-division work (including lower-division general education courses and American Institutions courses).

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Students must maintain a GPA of 3.0 or higher. Students in the first four years of the program who do not maintain these standards will be withdrawn from the SAGE Scholars program and returned to the non-SAGE BS in Packaging program.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Area B1 and B4, and SJSU Studies Area R. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.
- A grade of "B" or better is required in the three courses PKG 121 - Solidworks For Packaging, PKG 158 - Protective Package Design and Testing, and PKG 160 - Hazardous Materials Packaging to be double counted. Students who receive a passing grade (e.g., C- or higher) in PKG 121, PKG 158, and PKG 160, but don't earn a B minimum to satisfy the graduate coursework requirement will be required to take graduate electives.
- Students may opt out of the SAGE program and apply for the standalone master's degree program at any point like other non-SAGE applicants, in case they decide to complete a thesis or change the packaging objective.

Program Requirements (141 units)

Packaging, BS (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (43 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass NUFS 100W or PH 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A, C, D/American Institutions, and F; SJSU Studies Areas S and V 33 *units*
- Physical Education 2 *units*
- University Electives 8 *units*

Major Preparation (25 units)

- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3) (Students may substitute CHEM 1A for CHEM 30A)
- CHEM 30B - Introductory Chemistry 3 *unit(s)* (Students may substitute CHEM 8 for CHEM 30B)
- NUFS 100W - Writing Workshop 3 *unit(s)* (WID) OR PH 100W - Writing Workshop 3 *unit(s)* (WID)
- MATH 70 - Mathematics for Business 3 *unit(s)* (B4)
- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (B4)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- STAT 95 - Elementary Statistics 3 *unit(s)* OR PH 67 - Introductory Health Statistics 3 *unit(s)* (Both B4)

Major Requirements (52 units)

Core Courses (13 units)

- NUFS 9 - Introduction to Human Nutrition 3 *unit(s)* (E) OR NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 31 - Professionalism in Nutrition, Food Science and Packaging 1 *unit(s)*
- NUFS 151 - Food Microbiology 2 *unit(s)*
- NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology 1-6 *unit(s)* (4 *units* required)
- PKG 107 - Principles of Packaging 3 *unit(s)*

Packaging Requirements (39 units)

* PKG 121, PKG 158, PKG 160 (with a grade of B or better) will double count as graduate level courses for the SAGE Program

- NUFS 103 - Food Processing and Packaging I 2 *unit(s)*
- NUFS 103L - Food Processing Laboratory 1 *unit(s)*
- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- PKG 120 - Artios CAD For Packaging 3 *unit(s)*
- PKG 121 - Solidworks For Packaging 3 *unit(s)* *
- PKG 141A - Packaging Materials I, Paper, Metal, and Wood Based 3 *unit(s)*
- PKG 141B - Packaging Materials II, Plastics, Composites, and Glass 3 *unit(s)*
- PKG 146 - Packaging for Medical Devices and Pharmaceuticals 3 *unit(s)*
- PKG 156 - Packaging Machinery Systems 3 *unit(s)*
- PKG 158 - Protective Package Design and Testing 3 *unit(s)* *

- PKG 159 - Packaging Material Handling and Distribution 3 *unit(s)*
- PKG 160 - Hazardous Materials Packaging 3 *unit(s)* *
- PKG 169 - Food Packaging and Preservation 3 *unit(s)*
- PKG 170 - Packaging Development and Management 3 *unit(s)*

Master's Requirements (21 units)

Core Courses (15 units)

- NUFS 201 - Colloquium in Nutrition, Food Science and Packaging 3 *unit(s)*
- NUFS 217 - Issues in Nutrition, Food and Packaging 3 *unit(s)* (GWAR)
- NUFS 257 - Biostatistics in Research 3 *unit(s)*
- NUFS 295A - Research Methodology 3 *unit(s)*

Required Electives (6 units)

Complete two courses from:

- PKG 270 - Package Design for End Use 3 *unit(s)*
- PKG 268 - Advanced Laboratory Testing and Analysis 3 *unit(s)*
- DATA 230 - Business Intelligence and Data Visualization 3 *unit(s)*

Culminating Experience (3 units)

Plan B (Project)

- NUFS 298 - Special Studies in Nutrition, Food Science and Packaging 1-6 *unit(s)* (3 units required)

Total Units Required (141 units)

The standalone Nutritional Science, MS program requires 9 units of courses in a Specialization Area. Students satisfy this requirement in this SAGE Scholars Program by completing 9 units from PKG 121, PKG 158, and PKG 160, each with a minimum "B" grade, in the Packaging, BS program. These 9 credits are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

SJSU Online

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. These upper division degree completion programs are offered through a special session that requires a separate application process. If interested, please contact one of our Enrollment Counselors for more information.

Interdisciplinary Studies, Health Care Leadership Concentration, BS (SJSU Online)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process. The BS Interdisciplinary Studies, Health Care Leadership Concentration, offered by the College of Health and Human Sciences, is designed to give you the knowledge and skills you'll need to prepare you for professional health care careers in a global market. Coursework focuses on health care leadership skills, financial principles, management strategies and standards to improve patient care. You'll take courses in the physical and social sciences giving you a well rounded education to pursue careers in allied health roles or to prepare you for entry into a variety of health-related graduate degree programs. The flexibility offered by the interdisciplinary degree in Health Care Leadership, and the practical skills learned in the program, lead to many exciting careers in fields as diverse as public health, health education and administration, marketing and public relations, media, policy, research, clinical care, biotechnology, pharmaceutical development and sales, worksite wellness, politics, government, and environmental health among others.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Requirements	3
Major Requirements	42
University Electives	15
Total	120

Program Roadmaps

The 2-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums) and elective classes that are best suited to your career goals.

Transfer Units (60 units)

All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.

Applicants must also have completed the Core Lower Division General Education Requirements (39 units), including all four CSU-approved Basics Skills courses, each with a C- or better:

- (A1) Oral Communication/Speech
- (A2) Written English Composition
- (A3) Critical Thinking/Logic
- (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)

- STAT 95 OR PH 67 recommended

GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.

University Requirements (3 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

- KIN 169 - Diversity, Stress and Health 3 unit(s) (Area S)
- PH 172 - Contemporary Environmental Health Issues 3 unit(s) (Area R)
- NUFS 144 - Food Culture: Consuming Passions 3 unit(s) (Area V)

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Recommended:

- NUFS 100W - Writing Workshop 3 unit(s) (WID)
- PH 100W - Writing Workshop 3 unit(s) (WID)

Major Requirements (42 units)

- KIN 146 - Introduction to Exercise Technology 3 *unit(s)*
- KIN 151 - Sports and Fitness Marketing 3 *unit(s)*
- KIN 169 - Diversity, Stress and Health 3 *unit(s)* (S)
- NUFS 8 - Nutrition for the Health Professions 3 *unit(s)*
- NUFS 114A - Community Nutrition for Majors 3 *unit(s)*
- NUFS 144 - Food Culture: Consuming Passions 3 *unit(s)* (V)
- PH 99 - Introduction to Public Health 3 *unit(s)*
- PH 102 - Health Team Building 3 *unit(s)*
- PH 103 - Introduction to Health Policy 3 *unit(s)*
- PH 162 - Health Care Organization and Admin 3 *unit(s)*
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)
- RECL 152 - Non-Profit Leadership & Management 3 *unit(s)*
- SCWK 130 - Human Behavior in the Social Environment I 3 *unit(s)*
- SCWK 131 - Human Behavior in the Social Environment II 3 *unit(s)*

University Electives (15 units)

Total Units Required (120 units)

Public Health, BS (SJSU Online)

Fully Online Degree Completion Program

Students pursuing a BS in Public Health, offered by the Department of Public Health and Recreation, will join a group of students dedicated to documenting, monitoring, assessing, and improving the health of all communities, especially those who are marginalized.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes are delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Graduation Requirements	6
Major Requirements	54
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units), including all four CSU-approved Basics Skills courses, each with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
- Completion of at least 22 units of the following courses (or equivalents):
 - BIOL 21 - Human Biology 3 unit(s) (B2+B3)
 - BIOL 65 - Human Anatomy 4 unit(s) (B2+B3)
 - CHEM 30A - Introductory Chemistry 3 unit(s) (B1+B3)
 - PH 1 - Understanding Your Health 3 unit(s) (E)
 - PH 15 - Human Life Span 3 unit(s) (D)
 - PH 67 - Introductory Health Statistics 3 unit(s) (B4) (or equivalent statistics course)
 - PH 99 - Introduction to Public Health 3 unit(s)

University Requirements (6 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

This requirement is fulfilled in this major with:

- PH 100W - Writing Workshop 3 *unit(s)* (WID)

Major Requirements (54 units)

Students must complete the following the major core courses with a grade of "C" or better to graduate.

Core Courses (39 units)

- PH 102 - Health Team Building 3 *unit(s)*
- PH 103 - Introduction to Health Policy 3 *unit(s)*
- PH 104 - Community Health Promotion 4 *unit(s)*
- PH 135 - Health Issues in a Multicultural Society 3 *unit(s)* (S)
- PH 158 - Health Communications 3 *unit(s)*
- PH 161 - Epidemiology 3 *unit(s)*
- PH 162 - Health Care Organization and Admin 3 *unit(s)*
- PH 165A - Public Health Leadership Series I 1 *unit(s)*
- PH 165B - Public Health Leadership Series II 1 *unit(s)*
- PH 165C - Public Health Leadership Series III Fieldwork Experience 2 *unit(s)*
- PH 165D - Public Health Leadership Series IV 1 *unit(s)*
- PH 167 - Biostatistics 3 *unit(s)*
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)
- PH 179 - Public Health Capstone 3 *unit(s)*
-

Population Health Elective - Choose one course from the following:

- PH 145 - Community Mental Health 3 *unit(s)*
- PH 176 - Introduction to Global Health 3 *unit(s)*

Upper Division Public Health Electives or Minor (15 units)

Students must complete 15 units of upper division public health elective coursework from the approved list of courses or complete a minor.

- PH 145 - Community Mental Health 3 *unit(s)*

- PH 164 - Health Social Marketing 3 *unit(s)*
- PH 168 - Theoretical Foundations in Community Health Education 3 *unit(s)*
- PH 176 - Introduction to Global Health 3 *unit(s)*
- PH 183 - Special Topics in Community Health Education 3 *unit(s)*
- PH 188 - Community Health Assessment 3 *unit(s)*
- PH 191 - Applied Epidemiology 3 *unit(s)*
- PH 193 - Special Topics in Population Data Science 3 *unit(s)*
- PH 195 - Fundamentals of Data Management and Presentation 3 *unit(s)*
- PH 197 - Quantitative Analysis 3 *unit(s)*
- PH 198 - Qualitative Methods 3 *unit(s)*
- RECL 152 - Non-Profit Leadership & Management 3 *unit(s)*

Total Units Required (120 units)

College of Humanities and the Arts

Office: Washington Square Hall 120

Telephone: (408) 924-4300

Email: humanities-arts@sjsu.edu

Website: www.sjsu.edu/humanitiesandarts

Leadership:

Mary Elizabeth Anderson, Associate Dean of Faculty Success and Research

Shannon Miller, Dean

Roula Svorou, Associate Dean of Student Success and Academic Programs

Overview

The College of Humanities and the Arts seeks to instill in students an understanding of human existence that is tolerant, moral and appreciative of human creativity as manifested in works of language and literature, the visual and performing arts, philosophy and theology, and by engagement in the creation of art and criticism.

Through its programs, the College aims to develop engaged participants in the local communities as well as in the global dimension of cultural, intellectual, and economic life. College faculty educate students for lifelong learning as well as for their first job after graduation. Building upon a foundation of excellent oral and written communication, the College helps students pursue a wide variety of paths to knowledge and careers, through specialized study in many fields, including art history, animation, advertising, comparative literature, dance, film, foreign languages, journalism, musical composition and performance, painting, public relations, radio broadcasting, sculpture, television, linguistics, comparative religion, philosophy, theater, and technical and creative writing.

Faculty in all disciplines of the College engage in research published by major scholarly journals and university presses, supported by the major national grants and foundations, and presented at the major scholarly conferences. Artists within the College publish in important literary journals, exhibit at nationally recognized venues, or participate in prestigious performing arts productions. Throughout the College, faculty seek to produce scholarship or creative works that achieve national recognition.

College curricula develop the individual's power to communicate effectively and to analyze critically the conditions upon which cultural perceptions are built. Courses in the College attempt to reveal the evolving aspiration toward aesthetic and intellectual power in human cultures by exposing the student to important ideas, achievements, and experiences in the humanities and the creative arts. In its many professional arts programs, the College develops the

talent of those who have the skill to perform or create works of art, fixing in vivid form the values of diverse heritages. In its programs in language, literature, philosophy, and other areas of the humanities, the College engages students in the discovery and exploration of works from around the world that deepen understanding of how human imagination and intellect function within different historical and cultural contexts. A primary purpose of a humanities education is to develop the skills and confidence that support a creative, analytical mind capable of lifelong learning and adaptation to different contexts and opportunities. Students in design, animation, journalism, and advertising frequently win awards at state and national competitions.

Through its General Education, Arts, and many scholarly programs and research units, such as the Martha Heasley Cox Center for Steinbeck Studies, the Ira F. Brilliant Center for Beethoven Studies, the Center for Literary Arts, the Center on Ethics, and the Center for Comparative Philosophy, the College of Humanities and the Arts makes an indispensable contribution to the SJSU community and the region surrounding it. A list of programs and courses can be found on each department page in the catalog.

- Department of Art and Art History
- Department of Design
- Department of English and Comparative Literature
- Department of Film and Theatre
- Department of Humanities
- Department of Linguistics and Language Development
- Department of Philosophy
- Department of World Languages and Literatures
- School of Journalism and Mass Communications
- School of Music

Humanities and the Arts Student Success Center (HASSC)

Office: Washington Square Hall 120

Telephone: 408-924-5095

Email: ha-successcenter@sjsu.edu

Website: <https://www.sjsu.edu/ha-advising/>

The Humanities and the Arts Student Success Center provides general education advising, academic planning and serves as a resource to other programs at SJSU. We serve undergraduate students who are pursuing major(s) within the College of Humanities and the Arts. We offer both drop-in advising and appointments. All students within the college are encouraged to meet with an academic advisor to discuss a plan that will ensure timely graduation.

Internships

Internships provide students with the opportunity to incorporate work experience in a professional setting as part of their academic programs. Internship representatives are available within each department.

Special Centers

The College of Humanities and the Arts is home to the Martha Heasley Cox Center for Steinbeck Studies, the Ira F. Brilliant Center for Beethoven Studies, the Center for Literary Arts, the Center on Ethics, and the Center for Comparative Philosophy. The College manages the San José State University Writing Center, a resource for all SJSU students to help them become better writers. The College also manages the Hammer Theatre, a city-owned venue that offers a professional venue for our best students in theater, music, and dance.

Teaching Credential Preparation Programs

Teaching credential preparation programs are offered by the School of Music, the Department of Art and Art History, the Department of English and Comparative Literature, and the Department of Humanities (Liberal Studies).

Undergraduate Major(s)

Advertising, BS

In the world of competitive business, companies are always looking to gain an edge for their products or services. Advertising gets them that edge. Successful modern advertising takes creativity and innovation. The School of Journalism and Mass Communications can give you the skills to make a difference in this dynamic field.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	47
Major Requirements	57-60
University Electives	13-16
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (57-60 units)

Core Courses (27 units)

MCOM 199A/MCOM 199B substitutes for MCOM 111 and ADV 129 by invitation.

- ADV 91 - Introduction to Advertising 3 unit(s)
- ADV 121 - Strategic Planning/Communications 3 unit(s)
- ADV 128 - Integrated Marketing Communications (IMC) 3 unit(s)
(Creative Track students are not required to fulfill prerequisite BUS2 130. Contact instructor for permission code.)
- ADV 129 - Advertising Campaign Planning and Management 3 unit(s)
- MCOM 70 - Visual Communication for Modern Media 3 unit(s)
- MCOM 100W - Writing Workshop: Mass Communications 3 unit(s) (WID)
- MCOM 104 - Introduction to Mass Communications Research 3 unit(s)
- MCOM 111 - Mass Communications Internship 3 unit(s)
- MCOM 170 - Strategic Social Media & Digital Marketing 3 unit(s)

Track Option Requirements (30-33 units)

Choose Management, Creative or Marketing Communication Track:

Creative Option (30 units)

- ENGL 71 - Creative Writing 3 unit(s) (C1)
- ADV 93 - Design Fundamentals for Advertising 1 3 unit(s) (offered in Fall semester only)
- ADV 94 - Design Fundamentals for Advertising 2 3 unit(s) (offered in Spring semester only)
- ADV 95 - Working With Type 3 unit(s)
- ADV 124 - Copywriting 3 unit(s) (offered in Fall semester only)
- ADV 130 - Advertising Portfolio 1 3 unit(s) (offered in Fall semester only)
- ADV 131 - Advertising Portfolio 2 3 unit(s)
- ADV 132 - UX UI Design for Advertising 3 unit(s)
- Any Art or Design Elective 3 unit(s)
- Approved elective in Advertising, Journalism, Mass Communications, or Public Relations 3 unit(s)

Management Option (30 units)

- ADV 93 - Design Fundamentals for Advertising 1 3 unit(s) (offered in Fall semester only)
- ADV 122 - Business-to-Business Advertising 3 unit(s)
- ADV 123 - Introduction to Branded Content 3 unit(s)
- ADV 126 - Media Planning and Buying 3 unit(s)

- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 146 - Fundamentals of Project Management 3 *unit(s)*
- MCOM 63 - New Media 3 *unit(s)*
- MCOM 175 - Social Media and Web Analytics 3 *unit(s)* (offered in Fall semester only)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (*UNVS 15 may be used in lieu of the statistics course required by this major.*)

Complete one course:

- ADV 116 - Spartan Daily Advertising Staff 3 *unit(s)*
(*May also be used to satisfy the MCOM 111 - Mass Communications Internship requirement. Contact instructor or advisor for more info.*)
- Approved elective in Advertising, Journalism, Mass Communications, or Public Relations 3 *unit(s)*

Marketing Communication Option (33 units)

- ADV 126 - Media Planning and Buying 3 *unit(s)*
- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS5 146 - Fundamentals of Project Management 3 *unit(s)*
- JOUR 61 - Writing for Print, Electronic and Online Media 3 *unit(s)*
- MCOM 63 - New Media 3 *unit(s)*
- MCOM 175 - Social Media and Web Analytics 3 *unit(s)* (offered in Fall semester only)
- PR 99 - Introduction to Public Relations 3 *unit(s)*
- PR 190 - Media and Influencer Relations 3 *unit(s)*
- PR 191 - Strategic Content Creation 3 *unit(s)*
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)
(*UNVS 15 may be used in lieu of the statistics course required by this major.*)
- Approved elective in Advertising, Journalism, Mass Communications, or Public Relations 3 *unit(s)*

University Electives (10-13 units)

Total Units Required (120 units)

Animation & Illustration, BFA

The award-winning Animation & Illustration BFA program, offered by the Department of Design, is committed to providing a world-class education at an affordable price, preparing students for careers in feature film animation, games, television and any other media that uses animation and storytelling as a core communication tool. Industry professionals and peer educators rank SJSU Animation & Illustration among the best in the nation. The core curriculum combines both traditional and innovative educational strategies. Rigorous drawing classes and intensive study of color theory, design, perspective, and conventional and digital painting are required, as well as the study of the principles of both traditional and 3-D animation, physics of motion, modeling, storyboarding, character design, and visual development. Upper-division classes further define these disciplines offering students an opportunity to specialize in their area of choice.

All students must pass a milestone portfolio review to remain in the BFA program. Students who were admitted as Animation & Illustration BFA and do not pass portfolio review will be changed to Design Studies, BA majors with a specialization in Animation & Illustration (ANI). This specialization provides instruction in ANI foundation skills,

supplemented by studies in design, film, photography, and theater arts. Students receive basic preparation for entry-level jobs in the entertainment industry; optionally, they can later apply to a graduate program in Animation, Illustration or similar fields of study.

The Animation & Illustration BFA is a highly impacted major. This means that the number of applications from fully eligible students far exceeds the number of spaces available in the program. Students interested in an impacted major must apply for admission during the initial filing period for admission in the fall. Applications for admission to impacted majors are not accepted after the initial filing period.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	45
Major Preparation	36
Major Core Requirements	18
Specialization Area	21
Total	120

Program Roadmaps

The 4-Year and 5-year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Requirements

Students must maintain a 3.0 GPA on a 4.0 scale in all major preparation and major required courses. Students who drop below a 3.0 for two consecutive semesters will have their degree status changed from the BFA to the Design Studies, BA.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

This requirement is fulfilled in this major with:

- DSGN 100W - Writing Workshop: Design 3 *unit(s)* (*WID*)

Major Preparation (36 units)

- ANI 11 - Illustration Fundamentals I 3 *unit(s)* (*ART 24 will also be accepted for transfer students*)
- TA 5 - Acting 3 *unit(s)* (*C1*) (*Will also accept ARTH 72 Design in Society*)

Complete One Course From:

Highly Recommend Students take ARTH 70B

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (*C1*)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (*C1*)
- ARTH 70C - Arts of Asia 3 *unit(s)* (*C1*)

Additional Support Courses (27 units)

- ANI 10 - Light and Optics 3 *unit(s)* (*ART 12 will also be accepted for transfer students*)
- ANI 13 - Drawing for Animation/Illustration I 3 *unit(s)*
- ANI 15 - Visual Storytelling 3 *unit(s)*
- ANI 21 - Color Principles for Screen Arts 3 *unit(s)* (*ART 14 will also be accepted for transfer students*)
- ANI 31 - 2D Animation I 3 *unit(s)*
- ANI 41 - Introduction to 3D Modeling 3 *unit(s)*
- ANI 61 - Introduction to 3D Animation 3 *unit(s)*
- ANI 71 - Visual Principles 3 *unit(s)*
- ANI 111 - Drawing for Animation/Illustration II 3 *unit(s)*

Major Requirements (39 units)

Core Courses (12 units)

- ANI 121 - Illustration Fundamentals II 3 *unit(s)*
- ANI 122 - Illustration Fundamentals III 3 *unit(s)*
- ANI 131 - 2D Animation II 3 *unit(s)*
- ANI 132 - 2D Animation III 3 *unit(s)*

Specialization Area (21 units)

Choose a Specialization area in Animation and Story or Visual Development and Modeling.

Specializations are a cluster of courses used by departments for advising purposes. Specializations will not appear on transcripts or diplomas. Please see advisor for more details.

Animation and Story (21 units)

- ANI 133 - Animation Production - Storyboarding 3 *unit(s)*
- ANI 161 - Digital Animation I 3 *unit(s)*
- ANI 162 - Digital Animation II 3 *unit(s)*
- Three Approved Upper Division Electives 9 *unit(s)*

Complete One Course From:

- ANI 134 - Animation Production - Storyboarding II 3 *unit(s)*
- ANI 175 - Professional Practices in Entertainment Design 3 *unit(s)*

Visual Development and Modeling (21 units)

- ANI 123 - Visual Development I 3 *unit(s)*
- ANI 141 - Digital Modeling I 3 *unit(s)*
- Three Approved Upper Division Electives 9 *unit(s)*

Complete One Course From:

- ANI 124 - Visual Development II 3 *unit(s)*
- ANI 179 - Special Topics in Animation/Illustration 3 *unit(s)*

Complete One Course From:

- ANI 142 - Digital Modeling II 3 *unit(s)*
- ANI 175 - Professional Practices in Entertainment Design 3 *unit(s)*

Capstone Requirement (6 units)

- ANI 198 - Senior Seminar Animation/Illustration 3 *unit(s)*
- ANI 199 - Senior Project Animation/Illustration 3 *unit(s)*

Total Units Required (120 units)

Art History and Visual Culture, BA

The Art History and Visual Culture major, offered by the Department of Art and Art History, enriches the lives of its students by providing an in-depth knowledge of cultural traditions and creative accomplishment, and by providing the skills necessary for applying that knowledge in the service of our multicultural society. Course offerings include a wide range of themes and topics in Modern, Contemporary, Classical, Renaissance, Islamic, and Nineteenth Century art, architecture, and design. Examination of these diverse areas encourages students to become responsible citizens

through an understanding of the aesthetic, cultural, and ethical choices inherent in human development. Students in this program acquire the communication skills, research techniques, and methods of critical inquiry that have become a vital part of modern life.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	15-17
Major Core Requirements	18
Major Electives	30
University Electives	20-22
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15-17 units)

- ART 100W - Writing Workshop: Fine Arts 3 *unit(s)* (WID)
- ANTH 160 - Reconstructing Lost Civilizations 3 *unit(s)* (R)

Area S Arts (3 units)

Complete one course from:

- CA 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- RELS 191 - Religion in America 3 *unit(s)* (S)
- RTVF 110 - Media and Culture 3 *unit(s)* (S)
- URBP 101 - The City 3 *unit(s)* (S)
- WGSS 101 - Sex, Power, and Politics 3 *unit(s)* (S)

World Language/Art Foundation (6-8 units)

Complete 2 world language or 2 art foundation courses:

- World Language Course 3-4 *unit(s)*
- World Language Course 3-4 *unit(s)*
- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 14 - Color 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*

Major Requirements (48 units)

Core Requirements - General Art History (6 units)

Complete two courses from lower division Art History Survey:

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)

Art History Methods (3 units)

Complete one course from:

- ARTH 101 - Introduction to Practice of Art History 3 *unit(s)*
- ARTH 175 - Theories of Art History and Art Criticism 3 *unit(s)*

Global Art Area V (3 units)

Complete one course from:

- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)

Critical Periods in Western Art (3 units)

Complete one course from:

- ARTH 187A - Art of the Italian Renaissance, Fifteenth Century 3 *unit(s)*
- ARTH 190B - Early Modernist Art 3 *unit(s)*

Major Electives (30 units)

Complete 30 units from the coursework below. One course may be art studio. A minimum of one course from each of the following three groups, with a minimum of 3 additional courses selected from one of the groups.

Area 1: World Art

- ARTH 182A - Art of the Americas 3 *unit(s)*
- ARTH 189B - Global Baroque Art and Architecture 3 *unit(s)*
- ARTH 191B - Women in Art 3 *unit(s)*
- ARTH 191C - Contemporary Art in Mexico, the U.S., and Latin America 3 *unit(s)*
- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)
- ARTH 194A - Art of China 3 *unit(s)*
- ARTH 195 - Art of Japan 3 *unit(s)*

Area 2: Ancient and Early Modern Art in Europe

- ARTH 183A - Art of Egypt and Mesopotamia 3 *unit(s)*
- ARTH 185 - Art of the Classical World 3 *unit(s)*
- ARTH 186 - Medieval Art 3 *unit(s)*
- ARTH 187A - Art of the Italian Renaissance, Fifteenth Century 3 *unit(s)*
- ARTH 187B - Art of the Italian Renaissance, Sixteenth Century 3 *unit(s)*
- ARTH 187C - The Art of Renaissance Venice 3 *unit(s)*
- ARTH 188A - Northern Renaissance Fourteenth and Fifteenth Centuries 3 *unit(s)*
- ARTH 188B - Northern Renaissance, Sixteenth Century 3 *unit(s)*
- ARTH 189A - Baroque Art and Architecture in Europe 3 *unit(s)*
- ARTH 189B - Global Baroque Art and Architecture 3 *unit(s)*

Area 3: Modern and Contemporary Art

- ARTH 110 - History and Theory of New Media 3 *unit(s)*
- ARTH 126 - History of Photography 3 *unit(s)*

- ARTH 127 - Photography, Film, and Architecture 3 *unit(s)*
- ARTH 160 - Modern Architecture 3 *unit(s)*
- ARTH 161 - Contemporary Architecture 3 *unit(s)*
- ARTH 162 - California Architecture 3 *unit(s)*
- ARTH 163 - Twentieth Century Urban Design 3 *unit(s)*
- ARTH 176A - Graphic Design History and Theory 3 *unit(s)*
- ARTH 182B - American Art 3 *unit(s)*
- ARTH 190A - Art of the Nineteenth Century 3 *unit(s)*
- ARTH 190B - Early Modernist Art 3 *unit(s)*
- ARTH 190C - 20th Century Art: from Dada to Pop 3 *unit(s)*
- ARTH 190D - German Art, 1800-2000 3 *unit(s)*
- ARTH 191A - Issues in Contemporary Art 3 *unit(s)*
- ARTH 192A - Modern Design 3 *unit(s)*
- ARTH 192C - History of Interior Design 3 *unit(s)*

Capstone (3 units)

Complete one course from:

- ARTH 199 - Art History Capstone Seminar 3 *unit(s)*
- ARTH 277 - Seminar in Historiography 3 *unit(s)*

University Electives (20-22 units)

Total Units Required (120 units)

Art, Digital Media Art Concentration, BFA

The BFA Concentration in Digital Media Art (DMA), offered by the Department of Art and Art History, offers a multidisciplinary degree in digital art and design in the areas of computer graphics, web development, programming, physical computing, fabrication, prototyping, human computer interface (HCI), interaction design and computer games. Our curriculum is hands-on, providing project-oriented learning in collaborative workshop environments along with individually directed research and culminating exhibition opportunities. The DMA program area teaches technical, aesthetic, and critical thinking skills to empower students as problem solvers and innovators in the field of digital technology. Located in the heart of Silicon Valley, the DMA program is dedicated to the advancement of contemporary technologies through research and experimentation at the intersection of art and science. Students graduating from the program develop real-world skills using a wide range of tools, technologies, and techniques.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	24
Major Requirements	25
Specialized Courses	27

Total

120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

No portfolios are required at the time of application for admission to SJSU. Major requirements for the first two years of study for BA Art/Studio Practice and all BFA degrees are very similar so that students have time to choose the right path and can apply for the BFA, if they choose to do so. At that time BFA program applicants must meet the following departmental requirements:

1. Have completed, be currently enrolled in, or planning to enroll within the following two semesters in all coursework in the common preparation for the BA and BFA Art majors (25-28 units of drawing, digital media, photography, sculpture, art history, ART 1, ART 2, ART 3 and ART 100W) with a minimum grade point average of 3.0 on a 4.0 scale. Also recommended, are three to six additional units from the desired BFA concentration area.
2. Pass the BFA - Art admissions review. During the review, which is held in October and March each year, images of the applicant's creative work are reviewed by the art faculty to determine if the work demonstrates the creative level expected of BFA candidates. Instructions are available on the Art and Art History Department website.

Students complete the BFA Art program with a capstone project, for which each candidate prepares an individual art exhibit to demonstrate the candidate's professional competence.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (24 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*
- ART 74 - Introduction to Digital Media 3 *unit(s)*
- ART 75 - Introduction to Digital Video Art 3 *unit(s)*
- PHOT 40 - Beginning Photography 3 *unit(s)*

Complete One Course From:

Highly Recommend Students take ARTH 70B

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)

Major Requirements (52 units)

Core Requirements (19 units)

Art Fundamentals (10 units)

- ART 1 - Professional Preparation in Art 1 *unit(s)*
- ART 2 - The Artist in Contemporary Culture 3 *unit(s)*
- ART 3 - Medium and Message 3 *unit(s)*
- ART 100W - Writing Workshop: Fine Arts 3 *unit(s)* (WID)

Upper Division Art History (9 units)

- ARTH 110 - History and Theory of New Media 3 *unit(s)*

Complete One Course From:

- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)

Complete One Course From:

- ARTH 160 - Modern Architecture 3 *unit(s)*
- ARTH 161 - Contemporary Architecture 3 *unit(s)*

- ARTH 190C - 20th Century Art: from Dada to Pop 3 *unit(s)*
- ARTH 191A - Issues in Contemporary Art 3 *unit(s)*
- ARTH 192A - Modern Design 3 *unit(s)*

Specialized Courses (27 units)

Upper Division Digital Media Core (15 units)

- ART 101 - Digital Media Art 3 *unit(s)*
- ART 102 - 3D Modeling and Printing 3 *unit(s)*
- ART 103 - Art as System 3 *unit(s)*
- ART 104 - Interdisciplinary Seminar in Digital Media Art 3 *unit(s)*
- ART 105 - Advanced Digital Video 3 *unit(s)*

Material Processes (3 units)

Complete one course:

- ART 46 - Introduction to Ceramics 3 *unit(s)*
- ART 47 - Introduction to Metalsmithing 3 *unit(s)*
- ART 133 - Topics in Ceramic Sculpture 3 *unit(s)*
- ART 135 - Topics in Moldmaking for Artists 3 *unit(s)*
- ART 137 - Figure Modeling 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*
- ART 141 - Topics in Advanced Glass 3 *unit(s)*
- ART 149 - Topics in Jewelry and Small Sculpture 3 *unit(s)*
- ART 151 - Topics in Screen-Printing 3 *unit(s)*
- ART 153 - Topics in Intaglio Processes 3 *unit(s)*
- ART 168 - Topics in Woodworking 3 *unit(s)*
- ART 169 - Topics in Metal Sculpture 3 *unit(s)*
- ART 170 - Topics in Fabricated Sculpture 3 *unit(s)*
- ART 173 - Topics in Installation Art 3 *unit(s)*
- ART 178 - Art Field Work 1-3 *unit(s)*
- PHOT 120 - Image and Idea 3 *unit(s)*

Specialized Digital Media (9 units)

Complete three courses:

- ART 106 - Topics in Human Machine Interface 3 *unit(s)*
- ART 107 - Advanced Projects in Digital Media Art 3 *unit(s)*
- ART 108 - Introduction to Game Studies 3 *unit(s)*
- ART 109 - Web Development in HTML, CSS and JavaScript 3 *unit(s)*
- ART 175 - Special Topics in Studio Art 3 *unit(s)*
- ART 193 - Digital Materials 3 *unit(s)*
- ART 210 - Seminar in Digital Media Art 3 *unit(s)*

Capstone (6 units)

- ART 195 - BFA Group Exhibition 3 *unit(s)*
- ART 198 - BFA Seminar 3 *unit(s)*

Total Units Required (120 units)

Art, Photography Concentration, BFA

The BFA Concentration in Photography, offered by the Department of Art and Art History prepares students for careers in photography by providing courses that emphasize image as it relates to concept, theory, and professional practice in commercial and fine art photography. Our curriculum engages students in a diverse range of contemporary practices in the medium, from innovative approaches to digital imaging and traditional silver-based photography, to historic alternative photographic processes. We recognize the possibilities of the interdisciplinary nature of photographic practice and encourage interested students to explore installation, video and electronic media. In addition to our emphasis on fine art photography our program includes a strong commercial photography component, offering introductory through advanced courses in studio lighting and professional practices. The blend of fine art and commercial photography makes our program unique. Our technical facilities are extensive and include traditional black and white darkroom, commercial lighting studio stations, alternative practices studio, and large format digital printers.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	18
Major Requirements	28
Specialization Courses	30
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

No portfolios are required at the time of application for admission to SJSU. Major requirements for the first two years of study for BA Art/Studio Practice and all BFA degrees are very similar so that students have time to choose the right path and can apply for the BFA, if they choose to do so. At that time BFA program applicants must meet the following departmental requirements:

1. Have completed, be currently enrolled in, or planning to enroll within the following two semesters in all coursework in the common preparation for the BA and BFA Art majors (25-28 units of drawing, digital media, photography, sculpture, art history, ART 1, ART 2 and ART 100W) with a minimum grade point average of 3.0 on a 4.0 scale. Also recommended, are three to six additional units from the desired BFA concentration area.

2. Pass the BFA - Art admissions review. During the review, which is held in October and March each year, images of the applicant's creative work are reviewed by the art faculty to determine if the work demonstrates the creative level expected of BFA candidates. Instructions are available on the Art and Art History Department website.

Students complete the BFA Art program with a capstone project, for which each candidate prepares an individual art exhibit to demonstrate the candidate's professional competence.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (18 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 74 - Introduction to Digital Media 3 *unit(s)*
- PHOT 40 - Beginning Photography 3 *unit(s)*

Complete One Course From:

Highly Recommend Students take ARTH 70B

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)

Major Requirements (58 units)

Art Fundamentals (7 units)

- ART 1 - Professional Preparation in Art 1 *unit(s)*
- ART 2 - The Artist in Contemporary Culture 3 *unit(s)*
- ART 100W - Writing Workshop: Fine Arts 3 *unit(s)* (WID)

Art/Art History Electives (6 units)

Complete Two Courses in One of the Following Areas or Other Approved Electives.

Digital Media Art

- ART 75 - Introduction to Digital Video Art 3 *unit(s)*
- ART 105 - Advanced Digital Video 3 *unit(s)*

Photography

- PHOT 110 - Black and White Photography 3 *unit(s)*
- PHOT 113 - Alternative Photo Media 3 *unit(s)*
- PHOT 114 - Advanced Black and White Photography 3 *unit(s)*
- PHOT 122 - Advanced Lighting: Working with Strobes 3 *unit(s)*
- PHOT 123 - Photography as Illustration 3 *unit(s)*
- PHOT 125 - Special Topics in Photography 3 *unit(s)*

Pictorial Arts

- ART 26 - Drawing II 3 *unit(s)*
- ART 61 - Beginning Painting 3 *unit(s)*
- ART 151 - Topics in Screen-Printing 3 *unit(s)*
- ART 152 - Topics in Lithography 3 *unit(s)*
- ART 153 - Topics in Intaglio Processes 3 *unit(s)*
- ART 158 - Topics in Drawing III 3 *unit(s)*
- ART 162 - Watercolor 3 *unit(s)*
- ART 164A - Intermediate Painting 3 *unit(s)*
- ART 164B - Intermediate Painting II 3 *unit(s)*
- ART 165 - Topics in Figure Painting 3 *unit(s)*

Spatial Art

- ART 46 - Introduction to Ceramics 3 *unit(s)*
- ART 132 - Topics in Intermediate Ceramics 3 *unit(s)*
- ART 133 - Topics in Ceramic Sculpture 3 *unit(s)*
- ART 137 - Figure Modeling 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*

- ART 141 - Topics in Advanced Glass 3 *unit(s)*
- ART 168 - Topics in Woodworking 3 *unit(s)*
- ART 172 - Intermediate Sculpture: System/Structure 3 *unit(s)*
- ART 173 - Topics in Installation Art 3 *unit(s)*

Upper Division Art History (9 units)

- PHOT 126 - History of Photography 3 *unit(s)*

Complete One Course From:

- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)

Complete One Course From:

- ARTH 110 - History and Theory of New Media 3 *unit(s)*
- ARTH 191A - Issues in Contemporary Art 3 *unit(s)*

Specialization Courses (30 units)

Courses cannot be taken again if taken in another requirement area.

- PHOT 112 - Color Photography 3 *unit(s)*
- PHOT 115 - Intermediate Digital Imaging 3 *unit(s)*
- PHOT 116 - Contemporary Issues in Photography 3 *unit(s)*
- PHOT 120 - Image and Idea 3 *unit(s)*
- PHOT 121 - Introduction to Studio Lighting 3 *unit(s)*
- PHOT 129 - Professional Practices in Photography 3 *unit(s)*
- PHOT 197 - Senior Project Photography 3 *unit(s)*

Complete Three Courses From:

- PHOT 110 - Black and White Photography 3 *unit(s)*
- PHOT 113 - Alternative Photo Media 3 *unit(s)*
- PHOT 114 - Advanced Black and White Photography 3 *unit(s)*
- PHOT 122 - Advanced Lighting: Working with Strobes 3 *unit(s)*
- PHOT 123 - Photography as Illustration 3 *unit(s)*
- PHOT 125 - Special Topics in Photography 3 *unit(s)*

Capstone (6 units)

- ART 198 - BFA Seminar 3 *unit(s)*
- ART 199 - BFA Project 3 *unit(s)*

Total Units Required (120 units)

Art, Pictorial Art Concentration, BFA

The Pictorial Art BFA program, offered by the Department of Art and Art History, provides students with an intellectual, creative, and physical setting that supports excellence in painting, drawing, and printmaking. It provides a mix of discipline and autonomy. Preparation begins with a strong understanding of the fundamentals of drawing. From that foundation, the program provides comprehensive challenges in all pictorial disciplines and emphasizes both the historical traditions of painting and contemporary approaches. Faculty and students engage in critical and personal dialogue to encourage the development of a strong independent vision.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	24
Major Core Requirements	25
Concentration Requirements	27
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

No portfolios are required at the time of application for admission to SJSU. Major requirements for the first two years of study for BA Art/Studio Practice and all BFA degrees are very similar so that students have time to choose the right path and can apply for the BFA, if they choose to do so. At that time BFA program applicants must meet the following departmental requirements:

1. Have completed, be currently enrolled in, or planning to enroll within the following two semesters in all coursework in the common preparation for the BA and BFA Art majors (25-28 units of drawing, digital media, photography, sculpture, art history, ART 1, ART 2, ART 3 and ART 100W) with a minimum grade point average of 3.0 on a 4.0 scale. Also recommended, are three to six additional units from the desired BFA concentration area.
2. Pass the BFA - Art admissions review. During the review, which is held in October and March each year, images of the applicant's creative work are reviewed by the art faculty to determine if the work demonstrates the creative level expected of BFA candidates. Instructions are available on the Art and Art History Department website.

Students complete the BFA Art program with a capstone project, for which each candidate prepares an individual art exhibit to demonstrate the candidate's professional competence.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 unit(s) (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 unit(s) (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 unit(s) (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 unit(s) (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (24 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 unit(s)
- ART 13 - Three-Dimensional Design Concepts 3 unit(s)
- ART 24 - Drawing I 3 unit(s)
- ART 26 - Drawing II 3 unit(s)
- ART 61 - Beginning Painting 3 unit(s)
- ART 74 - Introduction to Digital Media 3 unit(s)
- PHOT 40 - Beginning Photography 3 unit(s)

Complete One Course From:

Highly Recommend Students take ARTH 70B

- ARTH 70A - Art History, Prehistoric to Medieval 3 unit(s) (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 unit(s) (C1)
- ARTH 70C - Arts of Asia 3 unit(s) (C1)

Major Requirements (52 units)

Core Requirements (19 units)

Art Fundamentals (10 units)

- ART 1 - Professional Preparation in Art 1 unit(s)
- ART 2 - The Artist in Contemporary Culture 3 unit(s)
- ART 3 - Medium and Message 3 unit(s)
- ART 100W - Writing Workshop: Fine Arts 3 unit(s) (WID)

Upper Division Art History (9 units)

- One Course of Upper Division Art History 3 *unit(s)*

Complete One Course From:

- ARTH 190B - Early Modernist Art 3 *unit(s)*
- ARTH 191A - Issues in Contemporary Art 3 *unit(s)*

Complete One Course From:

- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)

Specialized Courses (15 units)

Complete Two Courses From:

- ART 150 - Topics in Printmaking and Letterpress 3 *unit(s)*
- ART 151 - Topics in Screen-Printing 3 *unit(s)*
- ART 152 - Topics in Lithography 3 *unit(s)*
- ART 153 - Topics in Intaglio Processes 3 *unit(s)*
- ART 155 - Topics in Monotype 3 *unit(s)*

Complete Two Courses From:

- ART 25 - Expressive Drawing 3 *unit(s)*
- ART 158 - Topics in Drawing III 3 *unit(s)*
- ART 164A - Intermediate Painting 3 *unit(s)*
- ART 164B - Intermediate Painting II 3 *unit(s)*

Complete One Course From:

- ART 46 - Introduction to Ceramics 3 *unit(s)*
- ART 47 - Introduction to Metalsmithing 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*
- ART 132 - Topics in Intermediate Ceramics 3 *unit(s)*
- ART 134 - Topics in Advanced Ceramics 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*
- ART 147 - Topics in Metalsmithing and Jewelry 3 *unit(s)*
- ART 149 - Topics in Jewelry and Small Sculpture 3 *unit(s)*
- ART 169 - Topics in Metal Sculpture 3 *unit(s)*
- ART 172 - Intermediate Sculpture: System/Structure 3 *unit(s)*
- ART 173 - Topics in Installation Art 3 *unit(s)*

Area Requirements (12 units)

Complete Four Courses in One of The Following Areas:

Courses cannot be taken again if taken in another requirement area except ART 150, ART 152, ART 153, ART 155, ART 158, and ART 166 which are repeatable for credit.

Area One

- ART 166 - Topics in Advanced Painting 3 unit(s)
Choose 9 units from:
- ART 158 - Topics in Drawing III 3 unit(s)
- ART 162 - Watercolor 3 unit(s)
- ART 164A - Intermediate Painting 3 unit(s)
- ART 164B - Intermediate Painting II 3 unit(s)
- ART 165 - Topics in Figure Painting 3 unit(s)

Area Two

- ART 150 - Topics in Printmaking and Letterpress 3 unit(s)
Choose 9 units from:
- ART 151 - Topics in Screen-Printing 3 unit(s)
- ART 152 - Topics in Lithography 3 unit(s)
- ART 153 - Topics in Intaglio Processes 3 unit(s)
- ART 155 - Topics in Monotype 3 unit(s)

Capstone (6 units)

- ART 198 - BFA Seminar 3 unit(s)
- ART 199 - BFA Project 3 unit(s)

Total Units Required (120 units)

Art, Spatial Art Concentration, BFA

The BFA Art, Concentration in Spatial Art, offered by the Department of Art and Art History, is a degree for artists seeking to specialize in sculpture and three-dimensional art processes. Spatial Art students begin with the common Art core of drawing, photography, digital media art, three-dimensional design, art history, and seminars about making a career as an artist. They then move into intermediate and advanced classes focused on large metal casting, woodworking, glass, ceramics, jewelry, and installation art. All studio classes emphasize concept development and recognition of contemporary art-world trends, while upper-division art history classes provide context and develop students' critical thinking skills.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	24

Major Core Requirements	25
Specialized Courses	27
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

No portfolios are required at the time of application for admission to SJSU. Major requirements for the first two years of study for BA Art/Studio Practice and all BFA degrees are very similar so that students have time to choose the right path and can apply for the BFA, if they choose to do so. At that time BFA program applicants must meet the following departmental requirements:

1. Have completed, be currently enrolled in, or planning to enroll within the following two semesters in all coursework in the common preparation for the BA and BFA Art majors (25-28 units of drawing, digital media, photography, sculpture, art history, ART 1, ART 2, ART 3 and ART 100W) with a minimum grade point average of 3.0 on a 4.0 scale. Also recommended, are three to six additional units from the desired BFA concentration area.
2. Pass the BFA - Art admissions review. During the review, which is held in October and March each year, images of the applicant's creative work are reviewed by the art faculty to determine if the work demonstrates the creative level expected of BFA candidates. Instructions are available on the Art and Art History Department website.

Students complete the BFA Art program with a capstone project, for which each candidate prepares an individual art exhibit to demonstrate the candidate's professional competence.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (24 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 46 - Introduction to Ceramics 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*
- ART 74 - Introduction to Digital Media 3 *unit(s)*
- PHOT 40 - Beginning Photography 3 *unit(s)*

Complete One Course From:

Highly Recommend Students take ARTH 70B

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)

Major Requirements (52 units)

Core Requirements (19 units)

Art Fundamentals (10 units)

- ART 1 - Professional Preparation in Art 1 *unit(s)*
- ART 2 - The Artist in Contemporary Culture 3 *unit(s)*
- ART 3 - Medium and Message 3 *unit(s)*
- ART 100W - Writing Workshop: Fine Arts 3 *unit(s)* (WID)

Upper Division Art History Requirements (9 units)

- One Course of Upper Division Art History 3 *unit(s)*

Complete One Course From:

- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)

Complete One Course From:

- ARTH 160 - Modern Architecture 3 *unit(s)*
- ARTH 161 - Contemporary Architecture 3 *unit(s)*

- ARTH 190C - 20th Century Art: from Dada to Pop 3 *unit(s)*
- ARTH 191A - Issues in Contemporary Art 3 *unit(s)*
- ARTH 192A - Modern Design 3 *unit(s)*
- ARTH 192C - History of Interior Design 3 *unit(s)*

Specialized Courses (27 units)

Courses can not be taken again if taken in another requirement area.

- ART 173 - Topics in Installation Art 3 *unit(s)*

Complete Three Courses From:

- ART 47 - Introduction to Metalsmithing 3 *unit(s)*
- ART 133 - Topics in Ceramic Sculpture 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*
- ART 168 - Topics in Woodworking 3 *unit(s)*
- ART 169 - Topics in Metal Sculpture 3 *unit(s)*
- ART 170 - Topics in Fabricated Sculpture 3 *unit(s)*

Additional Courses (15 units)

- Complete two upper division courses from ART, ARTH, and/or PHOT. Courses cannot be taken again if taken in another requirement area 6 *unit(s)*

Complete Three Courses From:

- ART 132 - Topics in Intermediate Ceramics 3 *unit(s)*
- ART 133 - Topics in Ceramic Sculpture 3 *unit(s)*
- ART 134 - Topics in Advanced Ceramics 3 *unit(s)*
- ART 135 - Topics in Moldmaking for Artists 3 *unit(s)*
- ART 137 - Figure Modeling 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*
- ART 141 - Topics in Advanced Glass 3 *unit(s)*
- ART 147 - Topics in Metalsmithing and Jewelry 3 *unit(s)*
- ART 149 - Topics in Jewelry and Small Sculpture 3 *unit(s)*
- ART 168 - Topics in Woodworking 3 *unit(s)*
- ART 169 - Topics in Metal Sculpture 3 *unit(s)*
- ART 170 - Topics in Fabricated Sculpture 3 *unit(s)*
- ART 172 - Intermediate Sculpture: System/Structure 3 *unit(s)*
- ART 173 - Topics in Installation Art 3 *unit(s)*
- ART 175 - Special Topics in Studio Art 3 *unit(s)*
- ART 180 - Individual Studies 1-3 *unit(s)*

Capstone (6 units)

- ART 198 - BFA Seminar 3 *unit(s)*

- ART 199 - BFA Project 3 *unit(s)*

Total Units Required (120 units)

Art, Studio Practice Concentration (Preparation for Teaching), BA

The BA in Studio Practice/Preparation for Teaching, offered by the Department of Art and Art History, is designed for students interested in teaching art in high school or middle school and has been approved by the California Commission on Teacher Credentialing (CCTC) as meeting the undergraduate subject matter preparation for a single subject credential program to be completed after the BA. The Preparation for Teaching degree provides a broad foundation in contemporary art practice and permits some specialization in a favorite art medium as well as specialized courses in teaching art education for young people. (Note that completing this major does not guarantee admission to a credential program; see www.sjsu.edu/education for more information.) This is an excellent time to prepare for a teaching career in California.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	27
Major Core Requirements (includes Capstone)	25
Specialized Courses	9
University Electives	18
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (27 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*
- ART 74 - Introduction to Digital Media 3 *unit(s)*
- PHOT 40 - Beginning Photography 3 *unit(s)*

General Art History Survey (3 units)

Highly recommend students take ARTH 70B.

Complete one course:

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)

Aesthetics and Art Theory (3 units)

Complete one course:

- ARTH 101 - Introduction to Practice of Art History 3 *unit(s)*
- PHIL 66 - Introduction to Aesthetics 3 *unit(s)* (C1)
- PHIL 106 - Philosophy of Art 3 *unit(s)*

Specialized Art History (3 units)

Complete one course:

- ARTH 185 - Art of the Classical World 3 *unit(s)*
- ARTH 186 - Medieval Art 3 *unit(s)*
- ARTH 187A - Art of the Italian Renaissance, Fifteenth Century 3 *unit(s)*
- ARTH 190B - Early Modernist Art 3 *unit(s)*
- ARTH 191A - Issues in Contemporary Art 3 *unit(s)*
- ARTH 160 - Modern Architecture 3 *unit(s)*
- ARTH 161 - Contemporary Architecture 3 *unit(s)*

Major Requirements (34 units)

Core Requirements (22 units)

Art Fundamentals (13 units)

- ART 1 - Professional Preparation in Art 1 *unit(s)*
- ART 2 - The Artist in Contemporary Culture 3 *unit(s)*
- ART 3 - Medium and Message 3 *unit(s)*
- ART 61 - Beginning Painting 3 *unit(s)*
- ART 100W - Writing Workshop: Fine Arts 3 *unit(s)* (WID)

Teaching Fundamentals (6 units)

- ART 138 - Elementary Art Methods 3 *unit(s)*
- ART 139 - Teaching Diversity through Art 3 *unit(s)*

Upper Division Art History (3 units)

Complete one course:

- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)

Capstone (3 units)

- ARED 150 - Field Experience in the Arts 3 *unit(s)*

Area Focus (9 units)

Complete three (3) courses in one of the following areas:

Courses can not be taken again if taken in another requirement area.

Ceramics

- ART 46 - Introduction to Ceramics 3 *unit(s)*
- ART 132 - Topics in Intermediate Ceramics 3 *unit(s)*
- ART 133 - Topics in Ceramic Sculpture 3 *unit(s)*
- ART 134 - Topics in Advanced Ceramics 3 *unit(s)*
- ART 137 - Figure Modeling 3 *unit(s)*

Craft

- ART 47 - Introduction to Metalsmithing 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*

- ART 141 - Topics in Advanced Glass 3 *unit(s)*
- ART 147 - Topics in Metalsmithing and Jewelry 3 *unit(s)*
- ART 149 - Topics in Jewelry and Small Sculpture 3 *unit(s)*

Drawing/Painting

- ART 25 - Expressive Drawing 3 *unit(s)*
- ART 26 - Drawing II 3 *unit(s)*
- ART 158 - Topics in Drawing III 3 *unit(s)*
- ART 162 - Watercolor 3 *unit(s)*
- ART 164A - Intermediate Painting 3 *unit(s)*
- ART 164B - Intermediate Painting II 3 *unit(s)*
- ART 166 - Topics in Advanced Painting 3 *unit(s)*

Photography

- PHOT 110 - Black and White Photography 3 *unit(s)*
- PHOT 112 - Color Photography 3 *unit(s)*
- PHOT 115 - Intermediate Digital Imaging 3 *unit(s)*
- PHOT 116 - Contemporary Issues in Photography 3 *unit(s)*

Printmaking

- ART 151 - Topics in Screen-Printing 3 *unit(s)*
- ART 152 - Topics in Lithography 3 *unit(s)*
- ART 153 - Topics in Intaglio Processes 3 *unit(s)*
- ART 155 - Topics in Monotype 3 *unit(s)*

Sculpture

- ART 133 - Topics in Ceramic Sculpture 3 *unit(s)*
- ART 137 - Figure Modeling 3 *unit(s)*
- ART 149 - Topics in Jewelry and Small Sculpture 3 *unit(s)*
- ART 168 - Topics in Woodworking 3 *unit(s)*
- ART 170 - Topics in Fabricated Sculpture 3 *unit(s)*
- ART 173 - Topics in Installation Art 3 *unit(s)*

University Electives (18 units)

Talk with your advisor from the Department of Art and Art History about a list of recommended minors.

Total Units Required (120 units)

Art, Studio Practice Concentration, BA

The BA Art, Concentration in Studio Practice, offered by the Department of Art and Art History, is a degree for students who wish to pursue studio practice with the flexibility of a liberal arts degree. This could include a broad-based approach to artistic media or a focus on a single medium; university electives may be employed for any number of recommended minors. Students who wish to place more emphasis on the communication of ideas may opt to take classes, from painting, to video art, to glassblowing, to photography, to woodworking. Others may desire to specialize in one area as well as to develop preprofessional skills within the major. The BA Art, Concentration in Studio Practice allows students to tailor their own degree to meet precisely their artistic and career interests, while progressing through a rigorous core of theoretical seminars and art history lecture classes that will inform their work in any medium. The degree puts an emphasis on developing creative skills and the ability to fit into a variety of careers from high tech to arts administration.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	21
Major Core Requirements	19
Area Focus	12
University Electives (recommend a minor)	24
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (21 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*
- ART 74 - Introduction to Digital Media 3 *unit(s)*
- PHOT 40 - Beginning Photography 3 *unit(s)*

General Art History Survey (3 units)

Highly recommend students take ARTH 70B.

Complete one course:

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)

Major Requirements (31 units)

Core Requirements (19 units)

Art Fundamentals (10 units)

- ART 1 - Professional Preparation in Art 1 *unit(s)*
- ART 2 - The Artist in Contemporary Culture 3 *unit(s)*
- ART 3 - Medium and Message 3 *unit(s)*
- ART 100W - Writing Workshop: Fine Arts 3 *unit(s)* (WID)

Upper Division Art History (6 units)

Complete one course:

- ARTH 110 - History and Theory of New Media 3 *unit(s)*
- ARTH 191A - Issues in Contemporary Art 3 *unit(s)*

Complete one course:

- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)

Capstone (3 units)

Complete one course:

- ART 197 - BA Senior Project 3 *unit(s)*
- PHOT 120 - Image and Idea 3 *unit(s)*
- PHOT 197 - Senior Project Photography 3 *unit(s)*

Area Focus (12 units)

Complete at least three (3) courses from one of the following areas and one (1) additional course from any area:

Digital Media Art

- ART 75 - Introduction to Digital Video Art 3 *unit(s)*
- ART 101 - Digital Media Art 3 *unit(s)*
- ART 102 - 3D Modeling and Printing 3 *unit(s)*
- ART 103 - Art as System 3 *unit(s)*
- ART 104 - Interdisciplinary Seminar in Digital Media Art 3 *unit(s)*
- ART 105 - Advanced Digital Video 3 *unit(s)*
- ART 106 - Topics in Human Machine Interface 3 *unit(s)*
- ART 107 - Advanced Projects in Digital Media Art 3 *unit(s)*
- ART 108 - Introduction to Game Studies 3 *unit(s)*
- ART 109 - Web Development in HTML, CSS and JavaScript 3 *unit(s)*
- ART 193 - Digital Materials 3 *unit(s)*

Spatial Art

- ART 46 - Introduction to Ceramics 3 *unit(s)*
- ART 132 - Topics in Intermediate Ceramics 3 *unit(s)*
- ART 133 - Topics in Ceramic Sculpture 3 *unit(s)*
- ART 134 - Topics in Advanced Ceramics 3 *unit(s)*
- ART 135 - Topics in Moldmaking for Artists 3 *unit(s)*
- ART 137 - Figure Modeling 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*
- ART 141 - Topics in Advanced Glass 3 *unit(s)*
- ART 147 - Topics in Metalsmithing and Jewelry 3 *unit(s)*
- ART 149 - Topics in Jewelry and Small Sculpture 3 *unit(s)*
- ART 168 - Topics in Woodworking 3 *unit(s)*
- ART 169 - Topics in Metal Sculpture 3 *unit(s)*
- ART 170 - Topics in Fabricated Sculpture 3 *unit(s)*
- ART 172 - Intermediate Sculpture: System/Structure 3 *unit(s)*

- ART 173 - Topics in Installation Art 3 *unit(s)*

Pictorial Art

- ART 25 - Expressive Drawing 3 *unit(s)*
- ART 26 - Drawing II 3 *unit(s)*
- ART 61 - Beginning Painting 3 *unit(s)*
- ART 150 - Topics in Printmaking and Letterpress 3 *unit(s)*
- ART 151 - Topics in Screen-Printing 3 *unit(s)*
- ART 152 - Topics in Lithography 3 *unit(s)*
- ART 153 - Topics in Intaglio Processes 3 *unit(s)*
- ART 158 - Topics in Drawing III 3 *unit(s)*
- ART 162 - Watercolor 3 *unit(s)*
- ART 164A - Intermediate Painting 3 *unit(s)*
- ART 164B - Intermediate Painting II 3 *unit(s)*
- ART 165 - Topics in Figure Painting 3 *unit(s)*
- ART 166 - Topics in Advanced Painting 3 *unit(s)*

Photography

- PHOT 110 - Black and White Photography 3 *unit(s)*
- PHOT 112 - Color Photography 3 *unit(s)*
- PHOT 113 - Alternative Photo Media 3 *unit(s)*
- PHOT 114 - Advanced Black and White Photography 3 *unit(s)*
- PHOT 115 - Intermediate Digital Imaging 3 *unit(s)*
- PHOT 116 - Contemporary Issues in Photography 3 *unit(s)*
- PHOT 121 - Introduction to Studio Lighting 3 *unit(s)*
- PHOT 122 - Advanced Lighting: Working with Strobes 3 *unit(s)*
- PHOT 123 - Photography as Illustration 3 *unit(s)*
- PHOT 125 - Special Topics in Photography 3 *unit(s)*
- PHOT 129 - Professional Practices in Photography 3 *unit(s)*

Gallery/Projects/Internships

- ART 174A - Museum and Gallery Operations 3 *unit(s)*
- ART 174B - Internship: Museum and Gallery Operations 3 *unit(s)*
- ART 175 - Special Topics in Studio Art 3 *unit(s)*
- ART 180 - Individual Studies 1-3 *unit(s)*

Art History

- ARTH 110 - History and Theory of New Media 3 *unit(s)*
- ARTH 126 - History of Photography 3 *unit(s)*
- ARTH 160 - Modern Architecture 3 *unit(s)*
- ARTH 161 - Contemporary Architecture 3 *unit(s)*
- ARTH 162 - California Architecture 3 *unit(s)*
- ARTH 163 - Twentieth Century Urban Design 3 *unit(s)*

- ARTH 176A - Graphic Design History and Theory 3 *unit(s)*
- ARTH 182A - Art of the Americas 3 *unit(s)*
- ARTH 182B - American Art 3 *unit(s)*
- ARTH 183A - Art of Egypt and Mesopotamia 3 *unit(s)*
- ARTH 185 - Art of the Classical World 3 *unit(s)*
- ARTH 186 - Medieval Art 3 *unit(s)*
- ARTH 187A - Art of the Italian Renaissance, Fifteenth Century 3 *unit(s)*
- ARTH 187B - Art of the Italian Renaissance, Sixteenth Century 3 *unit(s)*
- ARTH 188A - Northern Renaissance Fourteenth and Fifteenth Centuries 3 *unit(s)*
- ARTH 188B - Northern Renaissance, Sixteenth Century 3 *unit(s)*
- ARTH 189A - Baroque Art and Architecture in Europe 3 *unit(s)*
- ARTH 189B - Global Baroque Art and Architecture 3 *unit(s)*
- ARTH 190A - Art of the Nineteenth Century 3 *unit(s)*
- ARTH 190B - Early Modernist Art 3 *unit(s)*
- ARTH 190C - 20th Century Art: from Dada to Pop 3 *unit(s)*
- ARTH 191A - Issues in Contemporary Art 3 *unit(s)*
- ARTH 192A - Modern Design 3 *unit(s)*
- ARTH 192C - History of Interior Design 3 *unit(s)*

University Electives (24 units)

Talk with your advisor from the Department of Art and Art History about a list of recommended minors.

Total Units Required (120 units)

Chinese, BA

The Department of World Languages and Literatures seeks to develop in students the ability to communicate effectively with people who speak languages other than English and whose world views and cultural values may differ substantially from their own. After the development of the four basic language skills (listening comprehension, speaking, reading, and writing) our programs seek to create an understanding and appreciation of the great works of classical and modern world literature in their original language, as well as in translation.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	20
Major Requirements	37-38
University Electives	21-22
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (20 units)

(Or CHIN 25A/CHIN 25B equivalent)

- CHIN 25A - Intermediate Chinese 4 *unit(s)* (C2)
- CHIN 25B - Intermediate Chinese 4 *unit(s)* (C2)

Foreign Language Requirement

- 12 units of a second world language 12 *unit(s)*

Major Requirements (37-38 units)

- CHIN 101A - Advanced Chinese 4 *unit(s)*
- CHIN 101B - Advanced Chinese 4 *unit(s)*
- CHIN 140 - Chinese Culture and Politics Through Literature 3 *unit(s)* (V)

- FORL 100W - Writing Workshop 3 *unit(s)* (WID)

Complete Six Courses From:

- CHIN 102 - Chinese Culture 4 *unit(s)*
- CHIN 110 - Structure of the Chinese Language 4 *unit(s)*
- CHIN 130 - Readings in Chinese Culture 4 *unit(s)*
- CHIN 132 - Special Topics in Chinese for Careers 4 *unit(s)*
- RELS 144 - Chinese Traditions 3 *unit(s)*

University Electives (21-22 units)

Total Units Required (120 units)

Creative Arts, BA

Advisor: Shannon Rose Riley. M.F.A., Ph.D.

Founded in 1956, the innovative Creative Arts Program is the oldest interdisciplinary arts and creativity studies program in the CSU. The program offers a flexible, interdisciplinary curriculum that examines creativity across the arts domains and emphasizes both creative and critical thinking. Offered by the Department of Humanities, students take core courses in creative arts in combination with art, English, comparative literature, music, dance, radio, film, and theatre courses, individualizing their program of study. We offer a major and a minor in Creative Arts. Key to the Program is an emphasis on creative thinking and the creative process. As a result, our students become effective thinkers and problem-solvers. Our graduates become successful visual and performing artists, teachers, arts administrators, activists, software developers, software engineers, physicians, writers, sound recording engineers, costume designers, arts therapists, librarians, lawyers, and entrepreneurs.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	32
Major Preparation	3
Major Requirements	45
University Electives	40
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

The following Required Major courses must be completed with a grade of "C- or better": CA 172, CA 173, CA 175, CA 176 and CA 178.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

- Recommend AMS 139 - Animals and Society 3 *unit(s)* (R)

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Major Preparation (3 units)

- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (WID)

Major Requirements (45 units)

To qualify for a baccalaureate in Creative Arts, a grade of "C-" (1.7) or better is required in each of the following courses:

- CA 172 - The Arts in U.S. Society 3 *unit(s)*
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)*
- CA 175 - Seminar in Creative Process 3 *unit(s)*
- CA 176 - Creativity and Creative Leadership 3 *unit(s)*
- CA 178 - Senior Seminar in Creative Arts 3 *unit(s)*

Lower Division Courses (9 units)

- CA 60 - Creativity Matters 3 *unit(s)* (E)
- HUM 95 - Introduction to Digital Humanities 3 *unit(s)*

Arts History/Theory Course (3 units)

Three units of lower division non-studio, non-activity courses in history or theory selected from the following: Art; Art History; Comparative Literature; Dance; Design; English; Music; Radio, Television, Film; Theatre Arts; and others approved by the CAP Advisor.

- CA 95 - Introduction to Queer Arts 3 *unit(s)* (C1)
- DANC 10 - Dance Appreciation 3 *unit(s)* (C1)
- ENGL 10 - Great Works of Literature 3 *unit(s)* (C2)
- ENGL 22 - Fantasy and Science Fiction 3 *unit(s)* (C2)
- MUSC 10A - Music Appreciation 3 *unit(s)* (C1)
- MUSC 19 - Music in World Cultures 3 *unit(s)* (C1)
- RTVF 82 - Introduction to Film History 3 *unit(s)*
- RTVF 31 - Film and Television Aesthetics 3 *unit(s)*
- TA 10 - Theatre Appreciation 3 *unit(s)* (C1)

Activity or Studio Courses (6 units)

Six units of activity or studio courses in visual or performing arts or creative writing listed below or approved by the CAP Advisor

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 26 - Drawing II 3 *unit(s)*
- DANC 40A - Topics in Modern Dance I 2 *unit(s)* (PE)
- DANC 42A - Topics in Jazz Dance I 2 *unit(s)* (PE)
- ENGL 71 - Creative Writing 3 *unit(s)* (C1)
- TA 5 - Acting 3 *unit(s)* (C1)
- TA 17 - Intermediate Acting 3 *unit(s)*
- TA 48 - Voice & Movement for the Actor 3 *unit(s)* (E)

Upper Division Courses (9 units)

Nine unit program of study of upper division courses in two or more arts disciplines selected primarily from the following: Art; Art History; Comparative Literature; Dance; Design; English; Music; Radio, Television, Film; Theatre Arts; World Languages and Literatures (literature only); or for a complete list of electives, see the Creative Arts Advisor

- AMS 179 - Issues in US Popular Culture 3 *unit(s)*
- ART 110 - History and Theory of New Media 3 *unit(s)*
- ARTH 126 - History of Photography 3 *unit(s)*
- CA 134 - Religion Film & Media 3 *unit(s)*
- DANC 102 - Dance in World Cultures 3 *unit(s)* (V)
- DANC 148 - Children's Dance 3 *unit(s)*

- ENGL 176 - The Short Story 4 *unit(s)*
- RTVF 111 - Global Screen Cultures 3 *unit(s)* (V)
- RTVF 181 - Modern Film History 3 *unit(s)*
- SPAN 120A - Spanish Literature I 4 *unit(s)*
- TA 120 - Theatre History 3 *unit(s)*
- TA 121 - Topics in Performance History 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*

Creative Arts Courses (21 units)

- CA 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)* (V)
- CA 175 - Seminar in Creative Process 3 *unit(s)*
- CA 176 - Creativity and Creative Leadership 3 *unit(s)*
- CA 178 - Senior Seminar in Creative Arts 3 *unit(s)*

Complete Six Units From:

- CA 180 - Individual Studies 1-4 *unit(s)*
- CA 190 - Field Work/Internship 1-3 *unit(s)*
- CA 194 - Community Building through Arts Orgs 3 *unit(s)*
- HUM 160 - Special Topics in Humanities 3 *unit(s)*

For prospective teachers only with advisor permission: CA 177 plus either CA 139 or CA 150.

University Electives (40 units)

Total Units Required (120 units)

Dance, BA

The Bachelor of Arts in Dance encourages young artists to explore their talents through comprehensive study of dance technique, choreography, and performance. BA candidates also pursue dance studies in such areas as history, dance cultures, pedagogy, stage production and kinesiology, where students gain the intellectual foundation to understand the body from the perspective of history, culture, and science. Dancers are also invited to choose either contemporary dance or tap/hip hop/jazz as their technical concentration. Through the support of the department's professionally active and diverse faculty, students are encouraged to participate in performance opportunities to refine their unique talents as creative makers, doers, and thinkers.

Auditions are required to place students in the appropriate levels.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	42
Major Preparation	9

Major Requirements	53
University Electives	16
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the preparation and major (all courses in preparation, and core) must be completed with a grade of "C- or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is met with the completion of the major.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (9 units)

- DANC 102 - Dance in World Cultures 3 *unit(s)* (V)

Complete One Course From:

- MUSC 100W - Written Communication II 3 *unit(s)* (WID)
- TA 100W - Writing Workshop: Theatre Arts 3 *unit(s)* (WID)

Complete One Course From:

- ARTH 15 - Intro to Visual Culture 3 *unit(s)* (C1)
- MUSC 10A - Music Appreciation 3 *unit(s)* (C1)

Major Requirements (53 units)

Dance Technique, Performance and Choreography (36 units)

Dance Technique (18 units)

Complete at least six units of DANC 154A and/or DANC 154B. All Dance technique classes are repeatable for credit.

- DANC 54 - Topics in Dance Technique II 3 *unit(s)* (PE)
- DANC 154A - Topics in Dance Technique III 3 *unit(s)* (PE)
- DANC 154B - Topics in Dance Technique IV 3 *unit(s)* (PE)

Culminating Experience (2 units)

- DANC 198 - Internship in Dance 1-3 *unit(s)*

Choreography (10 units)

- DANC 43 - Dance Improvisation 1 *unit(s)*
- DANC 145A - Choreography I 3 *unit(s)*
- DANC 145B - Choreography II 3 *unit(s)*
- DANC 145C - Choreography III 3 *unit(s)*

Performance (6 units)

Any combination of the following courses:

- DANC 12 - Ensemble Dance Rehearsal and Performance 2 *unit(s)*
- DANC 112 - ENS: Dance Rehearsal and Performance 2 *unit(s)*
- DANC 194 - Dance Repertory Activity 1 *unit(s)* (At minimum take DANC 194 twice)

Theory (17 units)

- DANC 51A - Dance Production 3 *unit(s)*
- DANC 51B - Topics in Dance Crewing 0.5 *unit(s)* (Students enroll in DANC 51B twice)
- DANC 75 - Rhythm and Dynamics in Dance 1 *unit(s)*
- DANC 144A - Dance History and Repertory 3 *unit(s)*
- DANC 147A - Dance Seminar 3 *unit(s)*
- DANC 150A - Kinesiology I 3 *unit(s)*
- DANC 150B - Kinesiology II 3 *unit(s)*

University Electives (16 units)

By advisement: 9 units must be outside of the dance area.

Total Units Required (120 units)

Dance, BFA

The Bachelor of Fine Arts in Dance offers a rigorous immersion in the performing art with the goal of providing professional training to young dancers as movers, makers, technicians and thinkers as they evolve as whole artists. At the heart of the curriculum are daily courses in technique, which includes contemporary dance, ballet, hip hop, tap, jazz and West African; rigorous bi-weekly choreographic application of ideas of space, time and form; and near-daily rehearsal in the University Dance Theater (UDT). Through the support of the department's professionally active and diverse faculty, UDT functions as a laboratory where dancers wrestle with new movement idioms or choreographic methods, and are given the chance to push their dancing to new heights. At the same time, the program's academic coursework in history, dance cultures, pedagogy, and kinesiology provide students an intellectual foundation to understand the body as historical, cultural, and material.

Auditions are required for admission.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	42
Major Preparation	11
Major Requirements	64
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is met with the completion of the major.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (11 units)

- DANC 43 - Dance Improvisation 1 unit(s)
- DANC 75 - Rhythm and Dynamics in Dance 1 unit(s)
- MUSC 10A - Music Appreciation 3 unit(s) (C1)
- MUSC 100W - Written Communication II 3 unit(s) (WID) (TA 100W also accepted)
- DANC 102 - Dance in World Cultures 3 unit(s) (V)

Major Requirements (64 units)

Dance Technique, Performance and Choreography (53 units)

Freshmen must perform at level II in area of option. Minimum of one technique class daily required each semester at SJSU. Level I is prerequisite if unable to perform at level II or higher in Modern, Jazz, Ballet or Tap.

Dance Technique (24 units)

Complete at least 6 units of DANC 154B.

- DANC 54 - Topics in Dance Technique II 3 unit(s) (PE)
- DANC 154A - Topics in Dance Technique III 3 unit(s) (PE)
- DANC 154B - Topics in Dance Technique IV 3 unit(s) (PE)

Performance Requirements (13 units)

Any combination of DANC 12, DANC 112 or DANC 194, 4 units must be DANC 112

- DANC 12 - Ensemble Dance Rehearsal and Performance 2 unit(s)
- DANC 112 - ENS: Dance Rehearsal and Performance 2 unit(s)
- DANC 194 - Dance Repertory Activity 1 unit(s)

Choreography (9 units)

- DANC 145A - Choreography I 3 unit(s)
- DANC 145B - Choreography II 3 unit(s)
- DANC 145C - Choreography III 3 unit(s)

Senior Project (3 units)

- DANC 147A - Dance Seminar 3 *unit(s)*

Production (4 units)

- DANC 51A - Dance Production 3 *unit(s)*
- DANC 51B - Topics in Dance Crewing 0.5 *unit(s)* (*Students will enroll in DANC 51B twice*)

Theory (11 units)

- DANC 144A - Dance History and Repertory 3 *unit(s)*
- DANC 150A - Kinesiology I 3 *unit(s)*
- DANC 150B - Kinesiology II 3 *unit(s)*
- DANC 151 - Introduction to Dance Pedagogy 2 *unit(s)*

University Electives (3 units)

Complete 3 units from university electives or from:

- DANC 49A - Topics in Tap Dance I 1 *unit(s)*
- DANC 53 - World Dance 1 *unit(s)*
- DANC 54 - Topics in Dance Technique II 3 *unit(s)* (PE)
- DANC 112 - ENS: Dance Rehearsal and Performance 2 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- DANC 154A - Topics in Dance Technique III 3 *unit(s)* (PE)
- DANC 154B - Topics in Dance Technique IV 3 *unit(s)* (PE)
- DANC 194 - Dance Repertory Activity 1 *unit(s)*
- DANC 198 - Internship in Dance 1-3 *unit(s)*

Total Units Required (120 units)

Design Studies, BA

The BA Design Studies, offered by the Department of Design, provides students with broad exposure to design principles, history, and theory. In addition to receiving a foundation through core courses, students tailor their studies by focusing on one of the areas of specialization described below. Students may be admitted to the BFA in Interior Design or BFA in Graphic Design or the BS in Industrial Design on a space-available basis after successfully completing required portfolio reviews.

- Program Learning Outcomes

Portfolio Review for the BFA and BS Programs

Animation & Illustration: Admission to the Animation & Illustration, BFA is determined at the time students apply for admission to the university. There is no internal change of major into the Animation & Illustration, BFA. Students who were admitted as Animation & Illustration, BFA and did not pass portfolio review will continue as Design Studies, BA majors with a specialization in Animation & Illustration. Consult with your advisor.

Graphic Design: Provides a basic understanding of the aesthetic and technical skills needed for graphic design. Students wishing to pursue a Graphic Design, BFA which would encompass exposure to a wider range of design disciplines, must pass two portfolio reviews: DSGD 100 coursework review in the Fall and DSGD 104 course-work review in the Spring. Students should consult with a major advisor about the portfolio review process and deadlines at the time they enter SJSU.

Industrial Design: Provides basic knowledge of 3D computer-aided design, materials and manufacturing, prototyping, and team-based theory. Students will have a basic preparation for jobs in computer-aided design support and model making, or be prepared to apply to a graduate program in Industrial Design or other areas. Students who wish to pursue the Industrial Design, BS must pass portfolio review. Students should consult with a major advisor about the portfolio review process and deadlines at the time they enter SJSU.

Interior Design: Provides a basic understanding of the aesthetic and technical skills needed for interior design. Students wishing to pursue an Interior Design, BFA which would encompass exposure to a wider range of design disciplines, must pass portfolio review. Students should consult with a major advisor about the portfolio review process and deadlines at the time they enter SJSU.

Summary of Degree Units

University Graduation Requirements	47
Major Requirements	48
University Electives	25
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- DSGN 100W - Writing Workshop: Design 3 *unit(s)* (*WID*)

Major Requirements (48 units)

Core Courses (24 units)

- ARTH 72 - Design in Society 3 *unit(s)* (*C1*)

Art History

Complete one course from:

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (*C1*)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (*C1*)
- ARTH 70C - Arts of Asia 3 *unit(s)* (*C1*)

Design Drawing

Based on your Area of Specialization, complete one course.

- ANI 11 - Illustration Fundamentals I 3 *unit(s)* (*ANI + GD*)
ART 24 will also be accepted for transfer students.
- DSID 21 - Visualization I 3 *unit(s)* (*ID*)
- DSIT 10 - Sketching, Drawing + Modeling 3 *unit(s)* (*IT*)

Design Foundation I

Based on your Area of Specialization, complete one course.

- ANI 10 - Light and Optics 3 *unit(s)* (*ANI*)
- DSGD 63 - Fundamental Graphic Visualization 3 *unit(s)* (*GD*)
ART 12 will also be accepted for transfer students.
- DSID 22 - Visualization II 3 *unit(s)* (*ID*)
- DSIT 5 - Introduction of Interior Design and Architecture 3 *unit(s)* (*IT*)

Design Foundation II

Based on your Area of Specialization, complete one course.

- ANI 71 - Visual Principles 3 *unit(s)* (*ANI*)
- DSGD 83 - Digital Applications: Basics 3 *unit(s)* (*GD*)
- DSID 31 - Industrial Design Foundation I 3 *unit(s)* (*ID*)
- DSIT 29 - Design Process 3 *unit(s)* (*IT*)

Design Methods I

Based on your Area of Specialization, complete one course.

- ANI 31 - 2D Animation I 3 *unit(s)* (ANI)
- DSGD 109 - Digital Apps: Motion & Interaction Design 3 *unit(s)* (GD)
- DSID 137 - Advanced Physical Prototyping 3 *unit(s)* (ID)
- DSIT 33 - Architectural Presentation 3 *unit(s)* (IT)

Design Methods II

Based on your Area of Specialization, complete one course.

- DSGD 99 - Introduction to Typography 3 *unit(s)* (ANI + GD)
- DSID 32 - Industrial Design Foundation II 3 *unit(s)* (ID)
- DSIT 83 - Visual Communication I 3 *unit(s)* (IT)

Design History

Based on your Area of Specialization, complete one course.

- ARTH 160 - Modern Architecture 3 *unit(s)* (IT)
- ARTH 161 - Contemporary Architecture 3 *unit(s)* (IT)
- DSGD 176A - Graphic Design History and Theory 3 *unit(s)* (GD)
- DSID 122 - Cont. & Crit. Studies: Industrial Design 3 *unit(s)* (ID)
- RTVF 181 - Modern Film History 3 *unit(s)* (ANI)

Area of Specialization (12 units)

Complete one Area of Specialization. Specializations are a cluster of courses used by departments for advising purposes. Specializations will not appear on transcripts or diplomas. Please see advisor for more details.

Graphic Design (GD)

- DSGD 100 - Visual Communication & Process 3 *unit(s)*
- DSGD 104 - Introduction to Graphic Design 3 *unit(s)*
- DSGD 111 - Design Values and Professional Practices 3 *unit(s)*
- DSGN 197 - BA Senior Project 3 *unit(s)*

Industrial Design (ID)

- DSID 41 - Materials and Processes I 3 *unit(s)*
- DSID 129 - Visualization III 3 *unit(s)*
- DSID 136 - Advanced Digital Workshop 3 *unit(s)*
- DSID 143 - Advanced Materials, Process & Technology 3 *unit(s)*

Interior Design (IT)

- DSIT 34 - Interior Architecture Foundation Studio 3 *unit(s)*

Complete Three Courses From:

- DSIT 106 - Architectural Project Materials 3 *unit(s)*
- DSIT 107 - Furniture Design 3 *unit(s)*
- DSIT 108 - Architectural Lighting Design 3 *unit(s)*
- DSIT 112 - Professional Practice of Interior Archit 3 *unit(s)*

Animation & Illustration (ANI)

Only for students who were admitted as Animation & Illustration, BFA and did not pass portfolio review. Consult with your advisor regarding the requirements to satisfy the specialization.

Major Electives (12 units)

With the departmental advisor approval, students must complete **6 units of lower division** design electives and **6 units of upper division** design electives.

Recommended Electives

- TA 5 - Acting 3 *unit(s)* (recommend for ANI students)
- DSID 126 - Ergonomics for Design 3 *unit(s)* (recommend for ID students)
- DSIT 106 - Architectural Project Materials 3 *unit(s)* (recommend for IT students)

University Electives (25 units)

Total Units Required (120 units)

English, BA

The Literature program, offered by the Department of English and Comparative Literature, provides students a solid grounding in literary genres, periods, and critical approaches to British, American, and World Literatures. Students are exposed to a wide range of canonical and non-canonical texts, and they learn to read closely and critically, and to write clearly and effectively. During their time at San Jose State, students will have an opportunity to develop and carry out research projects, and they will learn to locate, evaluate, and organize information effectively. Graduates of our program excel in close reading, critical thinking, and clear writing—all of which are crucial, marketable skills in today's job markets.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	6-16
Major Core Requirements	24-25

English Concentration	20
Major Elective	3-4
University Electives	17-29
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)

- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (6-16 units)

- One year of foreign language study at the college level or equivalency through examination 0-10 *unit(s)*
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3)

Area A2 Course (3 units)

Complete one course:

- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 1AS - First-Year Writing: Stretch English II 3 *unit(s)* (A2)

Additional Preparation (3-13 units)

- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3)
- One year of foreign language study at the college level or equivalency through examination 0-10 *unit(s)*

Major Requirements (47-49 units)

Core Courses (24-25 units)

- ENGL 50 - Beginnings to the American Experiment 3 *unit(s)*
- ENGL 60 - Literatures of the Atlantic World, 1680-1860 4 *unit(s)*
- ENGL 70 - Emerging Modernisms and Beyond 3 *unit(s)*
- ENGL 100W - Writing Workshop 4 *unit(s)* (WID)

Literature for Global Understanding (3 units)

Complete one course:

- ENGL 123A - Literatures of the Americas 3 *unit(s)* (V)
- ENGL 123B - Literatures of Africa 3 *unit(s)* (V)
- ENGL 123C - Literatures of the Pacific 3 *unit(s)* (V)
- ENGL 123D - Literatures of Asia 3 *unit(s)* (V)

Shakespeare (4 units)

Complete one course:

- ENGL 144 - Shakespeare I 4 *unit(s)*
- ENGL 145 - Shakespeare and Performance 4 *unit(s)*

American Literature & Ethnicity (3-4 units)

Complete one course:

- ENGL 165 - Black American Literatures 4 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)* (S)

English Concentration (20 units)

- ENGL 101 - Introduction to Literary Criticism 4 *unit(s)*

- ENGL 125 - Ancient Literatures 4 *unit(s)*

Complete 12 units of English Concentration Electives:

- ENGL 113 - Gothic and Horror Fiction 4 *unit(s)*
- ENGL 115 - The Bible as Literature 4 *unit(s)*
- ENGL 116 - Myth in Literature 4 *unit(s)*
- ENGL 117A - American Literature, Film, & Culture 3 *unit(s)* or
- ENGL 117B - Global Film, Literature, and Cultures 3 *unit(s)*
- ENGL 122 - Topics in Comparative World Literature 4 *unit(s)*
- ENGL 126 - Holocaust Literature 3 *unit(s)*
- ENGL 140A - Old English 4 *unit(s)*
- ENGL 140B - Beowulf 4 *unit(s)*
- ENGL 141 - Medieval Literature 4 *unit(s)*
- ENGL 142 - Chaucer 4 *unit(s)*
- ENGL 146 - Studies-Early Modern British Literature 4 *unit(s)*
- ENGL 151 - 20th and 21st Century Poetry 4 *unit(s)*
- ENGL 153 - Studies in the British Novel Before 1900 4 *unit(s)*
- ENGL 160 - Topics in American Literature 4 *unit(s)*
- ENGL 162 - Indigenous American Literatures 4 *unit(s)*
- ENGL 163 - Asian American Literatures 4 *unit(s)*
- ENGL 165 - Black American Literatures 4 *unit(s)*
(*only if not used to satisfy Core Courses*)
- ENGL 166 - Latinx Literatures 4 *unit(s)*
- ENGL 167 - Steinbeck 4 *unit(s)*
- ENGL 168 - The American Novel 4 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)*
(*only if not used to satisfy Core Courses*)
- ENGL 171 - Pop Cultures 4 *unit(s)*
- ENGL 176 - The Short Story 4 *unit(s)*
- ENGL 177 - Topics in Fiction Since 1900 4 *unit(s)*
- ENGL 182 - Women, Gender, and Sexuality in Literature 4 *unit(s)*
- ENGL 183 - Major Authors 4 *unit(s)*
- ENGL 184 - Queer Literary Studies 4 *unit(s)*

Major Elective (3-4 units)

- Any one upper division English Course 3-4 *unit(s)*

University Electives or Minor (17-29 units)

Total Units Required (120 units)

Explanations and Limitations

English majors who complete the Humanities Honors Program (HUM 10, HUM 11, HUM 20, HUM 21) will be credited for ENGL 125.

Details and advising information on the above requirements are available in the Department of English and Comparative Literature.

English, Creative Writing Concentration, BA

The undergraduate concentration in Creative Writing, offered by the Department of English and Comparative Literature, invites students to become involved in the creation of new literary art. Like all English majors, Creative Writing concentrators begin their studies with the three-course Transatlantic survey sequence, giving them a solid grounding in literary history. Later, they take writing workshops in various genres, including fiction, poetry, creative nonfiction, and scriptwriting. They are encouraged to work on the Department's 150-year-old literary magazine, *Reed*, and to participate in other literary programming on campus, for example the readings and conversations with visiting authors sponsored by SJSU's Center for Literary Arts.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	9-19
Major Core Requirements	24-25
Concentration Requirements	16
Major Elective	3-4
University Electives	18-30
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (9-19 units)

- ENGL 71 - Creative Writing 3 *unit(s)* (C1)
- One year of foreign language study at the college level or equivalency through examination 0-10 *unit(s)*
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3)

Complete one course (3 units):

- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 1AS - First-Year Writing: Stretch English II 3 *unit(s)* (A2)

Major Requirements (43-45 units)

Core Courses (24-25 units)

- ENGL 50 - Beginnings to the American Experiment 3 *unit(s)*
- ENGL 60 - Literatures of the Atlantic World, 1680-1860 4 *unit(s)*
- ENGL 70 - Emerging Modernisms and Beyond 3 *unit(s)*
- ENGL 100W - Writing Workshop 4 *unit(s)* (WID)

Literature for Global Understanding (3 units)

Complete one course:

- ENGL 123A - Literatures of the Americas 3 *unit(s)* (V)
- ENGL 123B - Literatures of Africa 3 *unit(s)* (V)
- ENGL 123C - Literatures of the Pacific 3 *unit(s)* (V)
- ENGL 123D - Literatures of Asia 3 *unit(s)* (V)

Shakespeare (4 units)

Complete one course:

- ENGL 144 - Shakespeare I 4 *unit(s)*
- ENGL 145 - Shakespeare and Performance 4 *unit(s)*

American Literature & Ethnicity (3-4 units)

Complete one course:

- ENGL 165 - Black American Literatures 4 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)* (S)

Creative Writing Concentration (16 units)

Courses may be repeated a maximum of 2 times. Complete four courses from:

- ENGL 130 - Writing Fiction 4 *unit(s)*
- ENGL 131 - Writing Poetry 4 *unit(s)*
- ENGL 133 - Reed Magazine 4 *unit(s)*
- ENGL 135 - Writing Nonfiction 4 *unit(s)*
- ENGL 178 - Creative Nonfiction 4 *unit(s)*

Major Elective (3-4 units)

- Any one upper division English Course 3-4 *unit(s)*

University Electives or Minor (18-30 units)

Total Units Required (120 units)

English, Preparation for Teaching (Single Subject), BA

The following course work satisfies San José State University's requirements for a BA in English. The BA- English Preparation for Teaching, offered by the Department of English and Comparative Literature, is approved as subject matter preparation for a single subject credential by the California Commission on Teacher Credentialing (CCTC). Individuals who do not wish to complete one of the degree programs, or individuals seeking a single subject credential in subject areas not listed must pass all portions of the appropriate Commission-approved subject matter examination(s).

Minimum grade point average (GPA) and completion of the program will not guarantee admission to the credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See "How to Become a Teacher" for information on application and admission to credential programs.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements

38

Major Preparation	6-16
Major Core Requirements	24-25
Concentration Electives	20
Major Elective	3-4
University Electives	17-29
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (6-16 units)

- One year of foreign language study at the college level or equivalency through examination *0-10 unit(s)*
- ENGL 2 - Critical Thinking and Writing *3 unit(s)* (A3)

Complete one course (3 units):

- ENGL 1A - First Year Writing *3 unit(s)* (A2)
- ENGL 1AS - First-Year Writing: Stretch English II *3 unit(s)* (A2)

Major Requirements (47-49 units)

Core Courses (24-25 units)

- ENGL 50 - Beginnings to the American Experiment *3 unit(s)*
- ENGL 60 - Literatures of the Atlantic World, 1680-1860 *4 unit(s)*
- ENGL 70 - Emerging Modernisms and Beyond *3 unit(s)*
- ENGL 100W - Writing Workshop *4 unit(s)* (WID)

Literature for Global Understanding (3 units)

Complete one course:

- ENGL 123A - Literatures of the Americas *3 unit(s)* (V)
- ENGL 123B - Literatures of Africa *3 unit(s)* (V)
- ENGL 123C - Literatures of the Pacific *3 unit(s)* (V)
- ENGL 123D - Literatures of Asia *3 unit(s)* (V)

Shakespeare (4 units)

- ENGL 145 - Shakespeare and Performance *4 unit(s)*

American Literature & Ethnicity (3-4 units)

Complete one course:

- ENGL 165 - Black American Literatures *4 unit(s)*
- ENGL 169 - Ethnicity in American Literature *3 unit(s)* (S)

Major Elective (3-4 units)

- Any one upper division English Course *3-4 unit(s)*

Single Subject Concentration (20 units)

- ENGL 101 - Introduction to Literary Criticism *4 unit(s)*
- ENGL 103 - Modern English *4 unit(s)*
- ENGL 109 - Writing and the Young Writer *4 unit(s)*

- ENGL 112B - Literature for Young Adults 4 unit(s)
- ENGL 125 - Ancient Literatures 4 unit(s)

University Electives or Minor (11-24 units)

Total Units Required (120 units)

English, Professional and Technical Writing Concentration, BA

Professional and Technical Writing is writing done in a workplace environment designed to persuade, inform, or instruct. While "professional" generally applies to business writing and "technical" generally applies to writing about technical topics, most professional writers would find the distinction superficial because they are frequently required to do both. SJSU's program (formerly called "Career Writing"), offered by the Department of English and Comparative Literature, has been going strong for over 30 years and our graduates work at nearly every major tech firm in the Bay Area. We have a strong job-placement record and help coordinate paid internships with local employers during the summer and the school year.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	6-16
Major Core Requirements	24-25
Concentration Requirements	20
Major Elective	3-4
University Electives	17-29
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (6-16 units)

- One year of foreign language study at the college level or equivalency through examination 0-10 *unit(s)*
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3)

Complete one course (3 units):

- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 1AS - First-Year Writing: Stretch English II 3 *unit(s)* (A2)

Major Requirements (47-49 units)

Core Courses (24-25 units)

- ENGL 50 - Beginnings to the American Experiment 3 *unit(s)*
- ENGL 60 - Literatures of the Atlantic World, 1680-1860 4 *unit(s)*
- ENGL 70 - Emerging Modernisms and Beyond 3 *unit(s)*
- ENGL 100W - Writing Workshop 4 *unit(s)* (WID)

Literature for Global Understanding (3 units)

Complete one course:

- ENGL 123A - Literatures of the Americas 3 *unit(s)* (V)
- ENGL 123B - Literatures of Africa 3 *unit(s)* (V)
- ENGL 123C - Literatures of the Pacific 3 *unit(s)* (V)
- ENGL 123D - Literatures of Asia 3 *unit(s)* (V)

Shakespeare (4 units)

Complete one course:

- ENGL 144 - Shakespeare I 4 *unit(s)*
- ENGL 145 - Shakespeare and Performance 4 *unit(s)*

American Literature & Ethnicity (3-4 units)

Complete one course:

- ENGL 165 - Black American Literatures 4 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)* (S)

Professional and Technical Writing Concentration (20 units)

- ENGL 103 - Modern English 4 *unit(s)*
- ENGL 106 - Professional and Technical Editing 4 *unit(s)*
- ENGL 107 - Professional and Technical Writing 4 *unit(s)*

Complete two courses (8 units):

- ENGL 105 - Seminar in Advanced Composition 4 *unit(s)*
- ENGL 110 - UX Design and Visual Communication 4 *unit(s)*
- ENGL 111 - Strategic Digital Content and Social Media Writing 4 *unit(s)*
- ENGL 129 - Writing for Professional Publications 4 *unit(s)*
- ENGL 157 - Topics in Rhetorical Analysis 4 *unit(s)*

Major Elective (3-4 units)

- Any one upper division English Course 3-4 *unit(s)*

University Electives or Minor (17-29 units)

Total Units Required (120 units)

French, BA

The Department of World Languages and Literatures seeks to develop in students the ability to communicate effectively with people who speak languages other than English and whose world views and cultural values may differ substantially from their own. After the development of the four basic language skills (listening comprehension, speaking, reading, and writing) our programs seek to create an understanding and appreciation of the great works of classical and modern world literature in their original language, as well as in translation.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	20
Major Requirements	34
University Electives	25
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (20 units)

- FREN 25A - Intermediate French: Reading 4 *unit(s)* (C2)
- FREN 25B - Intermediate French: Writing 4 *unit(s)* (C2) (Or equivalent)

Foreign Language Requirement

- 12 units of a second world language (or equivalent) *12 unit(s)*

Major Requirements (34 units)

Core Courses (34 units)

- FORL 100W - Writing Workshop *3 unit(s) (WID)*
- FREN 102B - Francophone Cultures: Through Literature and Cinema *3 unit(s) (V)*

Complete 2-3 courses from:

- FREN 101A - Advanced French: Reading and Writing *4 unit(s)*
- FREN 101B - Advanced French: Written Communication *4 unit(s)*
- FREN 101C - Advanced French: Oral Communication *4 unit(s)*

Complete 1-3 courses from:

- FREN 105 - Advanced Grammar: Phonetic Analysis *4 unit(s)*
- FREN 110 - Advanced Grammar: Grammatical Analysis *4 unit(s)*
- FREN 132 - Special Topics in French for Careers *4 unit(s)*
- FREN 170 - Translation and Comparative Stylistics *4 unit(s)*

Complete 2-3 courses from:

- FREN 120A - French Literature from the Middle Ages to 1600 *4 unit(s)*
- FREN 120B - French Literature of the Seventeenth through the Eighteenth Centuries *4 unit(s)*
- FREN 140B - French Literature 20th-21st Centuries *4 unit(s)*

Complete 0-2 courses from:

- FREN 102A - French Culture *4 unit(s)*
- FREN 102C - French Culture *4 unit(s)*
- FREN 160 - Masters of French Literature *4 unit(s)*

University Electives (25 units)

Total Units Required (120 units)

Graphic Design, BFA

The BFA Graphic Design program, offered by the Department of Design, prepares students for intellectually and aesthetically challenging careers in Graphic Design. Preparation involves both theoretical and practical study with emphasis on typography, form and image, information architecture, experience design and interactive design.

Admission to the BFA Graphic Design program is by portfolio review, which takes place after completing preliminary course work. After admission, passage of portfolio reviews conducted at the end of each semester are required to continue to advance through the BFA GD program. All students are required to complete a professional internship. In addition to the regular curriculum, students have the opportunity to attend special classes and workshops led by studio professionals and faculty members.

Students must pass a milestone portfolio review to remain in the BFA program. Students who do not pass the review will be changed to the Design Studies, BA.

The Graphic Design Program is on the list of schools accredited by National Association of Schools of Art & Design (NASAD).

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	47
Major Preparation	21
Major Requirements	48
University Electives	4
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Requirements

Students must maintain a 3.0 GPA on a 4.0 scale in all major preparation and major required courses. Students who drop below a 3.0 for two consecutive semesters will have their degree status changed from the BFA to the Design Studies, BA.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- DSGN 100W - Writing Workshop: Design 3 unit(s) (WID)

Major Preparation (21 units)

Preparation Courses (6 units)

- ANI 11 - Illustration Fundamentals I 3 unit(s) (ART 24 will also be accepted for transfer students)

Complete One Course From:

Highly Recommend Students take ARTH 70B

- ARTH 70A - Art History, Prehistoric to Medieval 3 unit(s) (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 unit(s) (C1)
- ARTH 70C - Arts of Asia 3 unit(s) (C1)

Additional Support Courses (15 units)

- ARTH 72 - Design in Society 3 unit(s) (C1)
- DSGD 63 - Fundamental Graphic Visualization 3 unit(s)
ART 12 will also be accepted for transfer students.
- DSGD 83 - Digital Applications: Basics 3 unit(s)
- DSGD 109 - Digital Apps: Motion & Interaction Design 3 unit(s)
- DSGD 176A - Graphic Design History and Theory 3 unit(s)

Major Requirements (48 units)

- DSGD 99 - Introduction to Typography 3 unit(s)
- DSGD 100 - Visual Communication & Process 3 unit(s)
- DSGD 102 - Intermediate Typography 3 unit(s)
- DSGD 103A - Advanced Typography I 3 unit(s)
- DSGD 104 - Introduction to Graphic Design 3 unit(s)
- DSGD 105 - Intermediate Graphic Design 3 unit(s)
- DSGD 106 - Advanced Graphic Design 3 unit(s)
- DSGD 108 - Graphic Design Portfolio 3 unit(s)

- DSGD 110 - Visual Literacy: Image Making 3 *unit(s)*
- DSGD 120 - Exhibition Design & Info Graphics 3 *unit(s)*
- DSGD 150 - Degree Project: Senior Studio 3 *unit(s)*
- DSGD 186 - Digital Applications: Methodology 3 *unit(s)*

Complete One Course From:

- DSGD 127 - Design Practicum 3 *unit(s)*
- DSGN 127 - Internship 1-4 *unit(s)* (3 *units required*)

Complete Three Courses From:

- DSGD 107A - Special Topics in Graphic Design 3 *unit(s)*
- DSGD 107B - Special Topics in Experience Design 3 *unit(s)*
- DSGD 131 - Motion Graphics 3 *unit(s)*
- DSGD 132 - User Interface & Interaction Design 3 *unit(s)*
- DSGD 141 - 3D Branding & Promotion Design 3 *unit(s)*

University Electives (4 units)

Total Units Required (120 units)

Humanities, American Studies Concentration, BA

The American Studies concentration of the Humanities BA provides a San José State home for the study of U.S. cultures. Our courses, research, and events emphasize the cultural, political, and social aspects of the United States, past and present. In addition to our core faculty, we draw our instructors from departments throughout the university in order to integrate disciplines and themes.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	0-12
Major Core Requirements	33
Concentration Electives	12-16
University Electives	18-34
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

Students in this major should consult their advisor regarding the American Institutions requirement. Depending on sequence(s) a student chooses, 0-30 units of GE/AI can be met in the major.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions

The 6 units of American Institutions (US123) requirement may be satisfied in the major (if identified below) or by transfer from a community college or university. Other courses meet the American Institutions requirement, but may not include additional GE areas.

Consult major advisor for department recommended coursework to meet GE requirement.

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (WID)

Recommended Major Preparation (0-12 units)

Recommended that native students complete one of the sequences below, in consultation with Advisor. Any student who completes the American Institutions requirement will have met this area.

Complete One Sequence From:

American Civilization

- AMS 1A - American Cultures to 1877 6 *unit(s)* (C1+D)
- AMS 1B - American Cultures 1877 to Present 6 *unit(s)* (C2+D+US123)

World History

- HIST 1A - World History to 1500 3 *unit(s)* (D)
- HIST 1B - World History from 1500 3 *unit(s)* (D)

Western Civilization

- HIST 10A - Western Civilization 3 *unit(s)* (D)
- HIST 10B - Western Civilization 3 *unit(s)* (D)

Major Requirements (45 units)

Core Courses (15 units)

- HUM 80 - Reading the World 3 *unit(s)* (A3)
- HUM 95 - Introduction to Digital Humanities 3 *unit(s)*
- HUM 101 - Human Life: Let's Think About It 3 *unit(s)*
- HUM 160 - Special Topics in Humanities 3 *unit(s)*
- HUM 190 - Senior Seminar in Humanities 3 *unit(s)*

Comparative Courses (9 units)

Complete three courses:

- AMS 129 - The U.S. in a Global Context 3 *unit(s)*
- AMS 159 - Nature and World Cultures 3 *unit(s)* (V)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)* (V)

- HUM 119 - Myths, Heroes, and Global Cultures 3 *unit(s)*
- HUM 128 - Perspectives on the Twentieth Century: The West in a Global Context 3 *unit(s)* (V)
- RELS 120 - Censors and Icons: Arts and Religion 3 *unit(s)*
- RELS 131 - Gender, Sexuality, and Religion 3 *unit(s)*

Additional Major Courses (9 units)

Choose three in addition to any American Studies course chosen above.

- AMS 129 - The U.S. in a Global Context 3 *unit(s)*
- AMS 139 - Animals and Society 3 *unit(s)* (R)
- AMS 160 - Special Topics in Humanities 3 *unit(s)*
- AMS 169 - The American Dream 3 *unit(s)* (S)
- AMS 179 - Issues in US Popular Culture 3 *unit(s)*
- CA 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- RELS 162 - Religion and Political Controversy in the US 3 *unit(s)* (S)

Major Electives (12-16 units)

Choose Four Courses From The Following Lists In One Of Three Ways: Topical, Time Period, Or Courses Chosen Evenly Across Multiple Disciplines. Consult American Studies Advisor For More Information And Options.

Values and Ideas:

- AAS 185 - Ethnic Studies Methodologies 3 *unit(s)*
- JS 132 - Race, Gender, Inequality and the Law 3 *unit(s)* (S)
- HIST 173 - New World Encounters, 1400-1750 4 *unit(s)*
- PHIL 112 - American Philosophy 3 *unit(s)*
- POLS 121C - Constitutional Law: Civil Rights 4 *unit(s)*
- POLS 163 - American Political Thought 3 *unit(s)*
- RELS 162 - Religion and Political Controversy in the US 3 *unit(s)* (S)
- RELS 191 - Religion in America 3 *unit(s)* (S)

Arts & Popular Culture:

- AFAM 102 - Black Music 3 *unit(s)*
- AFAM 161 - Black Representations in Media and New Technology 3 *unit(s)*
- ARTH 182A - Art of the Americas 3 *unit(s)*
- ARTH 182B - American Art 3 *unit(s)*
- COMM 169I - The Media: Response and Criticism 4 *unit(s)*
- ENGL 162 - Indigenous American Literatures 4 *unit(s)*
- ENGL 163 - Asian American Literatures 4 *unit(s)*
- ENGL 168 - The American Novel 4 *unit(s)*
- MUSC 120 - Worlds of Jazz 3 *unit(s)* (S)
- TA 103 - Musical Theatre 3 *unit(s)*

Economics, History, Politics and Society:

- AFAM 159 - The Racial Wealth Gap in America 3 *unit(s)* (S)
- ENV5 135 - U.S. Environmental Policy 3 *unit(s)*
- GEOG 140 - The United States 3 *unit(s)* (S)
- HIST 173 - New World Encounters, 1400-1750 4 *unit(s)*
- HIST 174 - Colonial & Revolutionary America 4 *unit(s)*
- HIST 175 - Inventing America, 1800-1860 4 *unit(s)*
- HIST 176 - The Civil War and Reconstruction 4 *unit(s)*
- HIST 177 - Industrial America, 1877-1920 4 *unit(s)*
- HIST 178 - Crash, Depression and War, 1920-1950 4 *unit(s)*
- HIST 179 - Cold War America, 1950-Present 4 *unit(s)*
- HIST 181 - Advanced Topics in American History 4 *unit(s)*
- POLS 154 - U.S. Foreign Policy: Formulation and Administration 4 *unit(s)*

Gender, Family and Sexuality:

- AFAM 125 - Black Kinship in the US - Black Families Past and Present 3 *unit(s)*
- AFAM 152 - Black Feminisms 3 *unit(s)* (S)
- HIST 188 - History of Women in the United States 3 *unit(s)* (S)
- LING 129 - Culture, Language and Ethnicity in the U.S. 3 *unit(s)* (S)
- CCS 160 - Gender and Sexuality in the Chicana/o Community 3 *unit(s)* (S)
- SOCI 172 - Lesbian, Gay, Bi, Transgender Studies 3 *unit(s)*
- WGSS 160 - Queering Gender, Race, and Class 3 *unit(s)*

Race, Ethnicity and Immigration:

- AAS 125 - Filipino Experience in the United States 3 *unit(s)*
- AAS 175 - Asian American Communities 3 *unit(s)* (S)
- AFAM 112 - Black Immigrant Communities 3 *unit(s)*
- ANTH 164 - North America before 1492 3 *unit(s)*
- COMM 172F - Multicultural Communication in the United States 4 *unit(s)*
- ENGL 165 - Black American Literatures 4 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)* (S)
- CCS 130 - Chicanas and Chicanos in American Society 3 *unit(s)* (S)
- CCS 175 - Human Migrations: Global Reach 3 *unit(s)*
- SOCI 160 - Immigration and Identity 3 *unit(s)*
- SOCI 162 - Race and Ethnic Relations 3 *unit(s)* (S)

University Electives (18-34 units)

The Department highly recommends majors complete the following:

- One year of college level foreign language or equivalent related to chosen area 0-10 *unit(s)*

Total Units Required (120 units)

Humanities, Liberal Arts Concentration, BA

The Liberal Arts concentration of the Humanities BA, offered by the Department of Humanities, offers students a broad exposure to global humanities with students choosing electives from across the Humanities Department's course offerings. With a major advisor's help, students can also design a particular pathway through the major with select courses from other departments. The BA Humanities, Liberal Arts is an interdisciplinary major integrating approaches from the humanities, the arts, environmental studies, and the social sciences.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Core Requirements	24
Concentration Electives	24
University Electives	34
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (0 units)

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (*WID*)

Major Requirements (48 units)

Core Courses (24 units)

- HUM 80 - Reading the World 3 *unit(s)* (*A3*)
- HUM 95 - Introduction to Digital Humanities 3 *unit(s)*
- HUM 101 - Human Life: Let's Think About It 3 *unit(s)*
- HUM 160 - Special Topics in Humanities 3 *unit(s)*
- HUM 190 - Senior Seminar in Humanities 3 *unit(s)*

Comparative Courses (9 units)

Complete three courses:

- AMS 129 - The U.S. in a Global Context 3 *unit(s)*
- AMS 159 - Nature and World Cultures 3 *unit(s)* (*V*)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)* (*V*)
- HUM 128 - Perspectives on the Twentieth Century: The West in a Global Context 3 *unit(s)* (*V*)
- RELS 131 - Gender, Sexuality, and Religion 3 *unit(s)*

Major Electives (24 units)

Choose Eight Courses From The Following, At Least Two From Each Area:

Area 1: Global Humanities

- HUM 114 - Legacy of Asia 3 *unit(s)* (*V*)
- HUM 119 - Myths, Heroes, and Global Cultures 3 *unit(s)*
- HUM 128 - Perspectives on the Twentieth Century: The West in a Global Context 3 *unit(s)* (*V*)
- RELS 144 - Chinese Traditions 3 *unit(s)*
- RELS 145 - Middle Eastern Traditions 3 *unit(s)* (*V*)

Area 2: American Studies

- AMS 129 - The U.S. in a Global Context 3 *unit(s)*
- AMS 139 - Animals and Society 3 *unit(s)* (*R*)
- AMS 159 - Nature and World Cultures 3 *unit(s)* (*V*)
- AMS 169 - The American Dream 3 *unit(s)* (*S*)
- AMS 179 - Issues in US Popular Culture 3 *unit(s)*

Area 3: Creative Arts

- CA 95 - Introduction to Queer Arts 3 *unit(s)* (C1)
- CA 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)* (V)
- CA 176 - Creativity and Creative Leadership 3 *unit(s)*
- RELS 120 - Censors and Icons: Arts and Religion 3 *unit(s)*

Area 4: Religious Studies

- RELS 122 - Magic, Science and Religion 3 *unit(s)* (V)
- RELS 131 - Gender, Sexuality, and Religion 3 *unit(s)*
- RELS 142 - Contemporary Buddhism and its Roots 3 *unit(s)*
- RELS 162 - Religion and Political Controversy in the US 3 *unit(s)* (S)
- RELS 191 - Religion in America 3 *unit(s)* (S)

University Electives (31 units)

The Department highly recommends majors complete the following:

- One year of college level foreign language or equivalent related to chosen area 0-10 *unit(s)*

Total Units Required (120 units)

Humanities, Religious Studies Concentration, BA

The Humanities B.A. Comparative Religious Studies Concentration, offered by the Department of Humanities, presents scholarly interpretations of the world's religious traditions. It aims to be as global as possible in covering the great diversity of religions and as inclusive as possible in covering various methodological approaches to the study of religion. The program offers a comprehensive preparation for those who plan to undertake graduate education in religious studies, history or sociology of religion, philosophy, theology, and other related areas.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	3
Major Core Requirements	24
Concentration Electives	18-23
University Electives	35-40
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

This requirement is fulfilled in this major with:

- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (WID)

Major Preparation (3 units)

- RELS 70 - Gods, Guns, Gurus, Grails-World Religion 3 *unit(s)* (C2)

Major Requirements (42-47 units)

Core Courses (15 units)

- HUM 80 - Reading the World 3 *unit(s)* (A3)
- HUM 95 - Introduction to Digital Humanities 3 *unit(s)*
- HUM 101 - Human Life: Let's Think About It 3 *unit(s)*
- HUM 160 - Special Topics in Humanities 3 *unit(s)*

- HUM 190 - Senior Seminar in Humanities 3 *unit(s)*

Comparative Courses (9 units)

Complete three courses:

- AMS 129 - The U.S. in a Global Context 3 *unit(s)*
- AMS 159 - Nature and World Cultures 3 *unit(s)* (V)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)* (V)
- HUM 119 - Myths, Heroes, and Global Cultures 3 *unit(s)*
- HUM 128 - Perspectives on the Twentieth Century: The West in a Global Context 3 *unit(s)* (V)
- RELS 131 - Gender, Sexuality, and Religion 3 *unit(s)*

Major Electives (18-23 units)

Six Courses From The Following, At Least Two From Each Area:

Traditions

- RELS 142 - Contemporary Buddhism and its Roots 3 *unit(s)*
- RELS 144 - Chinese Traditions 3 *unit(s)*
- RELS 145 - Middle Eastern Traditions 3 *unit(s)* (V)
- RELS 156 - Islam, Politics and the West 3 *unit(s)*

Thoughts, Texts, and Images

- ENGL 116 - Myth in Literature 4 *unit(s)*
- RELS 90 - Bible History and Literature 3 *unit(s)* (C2)
- RELS 104 - Asian Philosophy 3 *unit(s)* (V)
- RELS 109 - Philosophy of Religion 3 *unit(s)*
- RELS 134 - Religion Film & Media 3 *unit(s)*

Religions and Cultures

- AFAM 134 - The Black Civil Rights Movements 3 *unit(s)*
- HIST 121A - Medieval Worlds, 400-1000 4 *unit(s)*
- HIST 121B - Medieval Worlds, 1000-1500 4 *unit(s)*
- HIST 126 - Advanced Topics in Medieval History 4 *unit(s)*
- RELS 99 - Death, Dying and Religions 3 *unit(s)* (E)
- RELS 111 - Special Topics in Jewish Studies 3 *unit(s)*
- RELS 114 - Legacy of Asia 3 *unit(s)* (V)
- RELS 120 - Censors and Icons: Arts and Religion 3 *unit(s)*
- RELS 122 - Magic, Science and Religion 3 *unit(s)* (V)
- RELS 137 - Introduction to Black Religion 3 *unit(s)*
- RELS 162 - Religion and Political Controversy in the US 3 *unit(s)* (S)
- RELS 191 - Religion in America 3 *unit(s)* (S)

University Electives (35-40 units)

The department recommends majors complete the following:

- One year of college level foreign language or equivalent related to chosen area *0-10 unit(s)*

Total Units Required (120 units)

Industrial Design, BS

The Bachelor of Science Industrial Design (BSID) program, offered by the Department of Design, prepares students for a career in industrial design through a curriculum in design studio, theory and skill classes supported by courses and content in technology, business, science, the arts and humanities. Emphasis is placed on critical thinking, creative design process management, aesthetic theory, communication skills and awareness of business as well as humanistic dimensions of product development. The program draws upon extensive resources of local and internationally prominent design firms and alumni. It emphasizes exposure to professional practice. Studio projects provide experience with a diverse spectrum of products, user scenarios, and industries, leading to a comprehensive professional portfolio. The Industrial Design program is on the list of schools approved by the Industrial Designers Society of America (IDSA) and is accredited by National Association of Schools of Art & Design (NASAD).

Upon successful completion of the first year of study as a Design Studies, BA major, students can elect to participate in the BSID Portfolio Review. This review evaluates a student's demonstrated ability and successful candidates are accepted into the BSID major. The subsequent years of study in the BSID major are highly structured and require passing three annual portfolio courses: DSID 123A, DSID 125A, DSID 128A.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	39
Major Preparation	24
Major Requirements	57
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (*D+US23*)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (*D+US23*)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (*C2+US23*)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (*V+US23*)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

This requirement is fulfilled in this major with:

- DSGN 100W - Writing Workshop: Design 3 *unit(s)* (*WID*)

Major Preparation (24 units)

Preparation Courses (9 units)

- ARTH 72 - Design in Society 3 *unit(s)* (*C1*)
- PHYS 1 - Elementary Physics 3 *unit(s)* (*B1*)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (*C1*)

Additional Prep Courses (15 units)

- DSID 21 - Visualization I 3 *unit(s)*
- DSID 22 - Visualization II 3 *unit(s)*
- DSID 31 - Industrial Design Foundation I 3 *unit(s)*
- DSID 32 - Industrial Design Foundation II 3 *unit(s)*

Complete One Course From:

- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (*A3*)
- PHIL 57 - Logic and Critical Reasoning 3 *unit(s)* (*A3*)

Major Requirements (57 units)

Core Courses (50 units)

- DSID 32A - ID Portfolio Project I 1 *unit(s)*
- DSID 41 - Materials and Processes I 3 *unit(s)*

- DSID 121 - Industrial Design Process 3 *unit(s)*
- DSID 122 - Cont. & Crit. Studies: Industrial Design 3 *unit(s)*
- DSID 123 - Intermediate Industrial Design 3 *unit(s)*
- DSID 123A - ID Portfolio Project 2 3 *unit(s)*
- DSID 125 - Advanced Industrial Design 3 *unit(s)*
- DSID 125A - ID Portfolio Project 3 2 *unit(s)*
- DSID 126 - Ergonomics for Design 3 *unit(s)*
- DSID 129 - Visualization III 3 *unit(s)*
- DSID 136 - Advanced Digital Workshop 3 *unit(s)*
- DSID 137 - Advanced Physical Prototyping 3 *unit(s)*
- DSID 143 - Advanced Materials, Process & Technology 3 *unit(s)*
- DSGN 127 - Internship 1-4 *unit(s)*

Complete Four Courses From:

- DSID 124 - Design for All 3 *unit(s)*
- DSID 130 - Sustainable Design 3 *unit(s)*
- DSID 131 - Interaction Design 3 *unit(s)*
- DSID 132 - Softgoods 3 *unit(s)*
- DSID 133 - Design Projects: Making It 3 *unit(s)*
- DSID 134 - Design and Meaning 3 *unit(s)*
- DSID 135 - Design, Entrepreneurship, Intellectual Property and Professional Practice 3 *unit(s)*
- DSID 144 - Design for Healthcare 3 *unit(s)*

Capstone (7 units)

- DSID 128 - Advanced Projects in Industrial Design 3 *unit(s)* (*Students will take DSID 128 twice, for a total of 6 units.*)
- DSID 128A - ID Portfolio Project 4 1 *unit(s)*

Total Units Required (120 units)

Interior Design, BFA

Students majoring in Interior Design, offered by the Department of Design, draw upon a wide range of University and Bay Area community resources to prepare for professional careers in both the private and public sectors in areas such as corporate, hospitality, institutional, office and retail planning, programming, and design. Preparation involves both conceptual and practical study of interior architecture with emphasis on critical thinking, communication skills, design process, emerging technologies, human factors, aesthetic sensibilities, visualization, laws, codes and regulations, and professional ethics. Admission to the BFA Interior Design program is by satisfactory passage of the portfolio review, which occurs after completing preliminary course work. After admission, continued satisfactory passage of subsequent portfolio reviews conducted at the end of each semester are required to continue to advance through the BFA IT program. All students in the Interior Design Program are required to complete a 1-unit professional internship as part of their degree requirements.

Students must pass a milestone portfolio review to remain in the BFA program. Students who do not pass the review will be changed to the Design Studies, BA.

San José State University is an accredited institutional member of the National Association of Schools of Art and Design (NASAD), which is recognized by both the California Council for Interior Design Certification (CCIDC) and the National Council for Interior Design Qualification (NCIDQ).

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	39
Major Requirements	43
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Requirements

Students must maintain a 3.0 GPA on a 4.0 scale in all major preparation and major required courses. Students who drop below a 3.0 for two consecutive semesters will have their degree status changed from the BFA to the Design Studies, BA.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (39 units)

Preparation Courses (12 units)

- ARTH 72 - Design in Society 3 unit(s) (C1)
- DSGN 100W - Writing Workshop: Design 3 unit(s) (WID)
- DSIT 10 - Sketching, Drawing + Modeling 3 unit(s)

Complete One Course From:

Highly Recommend Students take ARTH 70B

- ARTH 70A - Art History, Prehistoric to Medieval 3 unit(s) (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 unit(s) (C1)
- ARTH 70C - Arts of Asia 3 unit(s) (C1)

Additional Prep Courses (27 units)

- DSIT 5 - Introduction of Interior Design and Architecture 3 unit(s)
- DSIT 29 - Design Process 3 unit(s)
- DSIT 33 - Architectural Presentation 3 unit(s)
- DSIT 34 - Interior Architecture Foundation Studio 3 unit(s)
- DSIT 83 - Visual Communication I 3 unit(s)
- DSIT 102 - Computer Graphics for Interior Architecture 3 unit(s)
- DSIT 103 - Interior Architecture Conceptual Design Studio 3 unit(s)
- ENVS 1 - Introduction to Environmental Issues 3 unit(s) (D)

Complete One Course From:

- ENGL 2 - Critical Thinking and Writing 3 unit(s) (A3)
- PHIL 57 - Logic and Critical Reasoning 3 unit(s) (A3)

Major Requirements (43 units)

- DSIT 100 - Building Codes 3 unit(s)
- DSIT 101 - Architectural Systems and Materials + Adv Modeling 3 unit(s)
- DSIT 104 - Interior Architecture Space Planning Studio 3 unit(s)
- DSIT 105 - Interior Architecture Advanced Design Studio 3 unit(s)
- DSIT 106 - Architectural Project Materials 3 unit(s)
- DSIT 107 - Furniture Design 3 unit(s)
- DSIT 108 - Architectural Lighting Design 3 unit(s)
- DSIT 109 - Object Design for Interiors 3 unit(s)

- DSIT 110 - Capstone Thesis Studio 3 *unit(s)*
- DSIT 111 - Interior Architecture Seminar 3 *unit(s)*
- DSIT 112 - Professional Practice of Interior Archit 3 *unit(s)*
- DSGN 127 - Internship 1-4 *unit(s)*

Complete One Course From:

- ARTH 160 - Modern Architecture 3 *unit(s)*
- ARTH 161 - Contemporary Architecture 3 *unit(s)*

Complete Two Courses From:

- ART 46 - Introduction to Ceramics 3 *unit(s)*
- ART 47 - Introduction to Metalsmithing 3 *unit(s)*
- ART 105 - Advanced Digital Video 3 *unit(s)*
- ART 132 - Topics in Intermediate Ceramics 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*
- ART 141 - Topics in Advanced Glass 3 *unit(s)*
- ART 147 - Topics in Metalsmithing and Jewelry 3 *unit(s)*
- ART 149 - Topics in Jewelry and Small Sculpture 3 *unit(s)*
- ART 168 - Topics in Woodworking 3 *unit(s)*
- ART 169 - Topics in Metal Sculpture 3 *unit(s)*
- ARTH 162 - California Architecture 3 *unit(s)*
- ARTH 163 - Twentieth Century Urban Design 3 *unit(s)*
- ARTH 192C - History of Interior Design 3 *unit(s)*
- DSGD 99 - Introduction to Typography 3 *unit(s)*
- ENVS 132 - Solar Home Design 3 *unit(s)*
- ENVS 137 - Green Building Design Issues 3 *unit(s)*
- PHIL 110 - Science, Technology and Human Values 3 *unit(s)* (V)
- URBP 101 - The City 3 *unit(s)* (S)
- URBP 120 - Intro to Housing Economics and Policy 4 *unit(s)*
- URBP 142 - Introduction to Environmental Planning 4 *unit(s)*
- URBP 151 - Introduction to Urban Design 4 *unit(s)*
- URBP 152 - Introduction to Urban Design Studio 4 *unit(s)*

University Electives (3 units)

Total Units Required (120 units)

Student chapters of the American Society of Interior Designers (ASID) and the International Interior Design Association (IIDA) contribute to this professional program.

Japanese, BA

The Department of World Languages and Literatures seeks to develop in students the ability to communicate effectively with people who speak languages other than English and whose world views and cultural values may differ

substantially from their own. After the development of the four basic language skills (listening comprehension, speaking, reading, and writing) our programs seek to create an understanding and appreciation of the great works of classical and modern world literature in their original language, as well as in translation.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	20
Major Core Requirements	22
Major Elective Courses	23-24
University Electives	13-14
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (20 units)

- JPN 25A - Intermediate Japanese 4 *unit(s)* (C2) or equivalent
- JPN 25B - Intermediate Japanese 4 *unit(s)* (C2) or equivalent

Foreign Language Requirement

- 12 units of a second world language (or equivalent) 12 *unit(s)*

Major Requirements (45-46 units)

Core Courses (22 units)

- JPN 101C - Advanced Conversational Japanese 4 *unit(s)*
- JPN 101A - Advanced Japanese 4 *unit(s)*
- JPN 101B - Advanced Japanese 4 *unit(s)*
- JPN 102A - Japanese Culture 4 *unit(s)*
- JPN 102B - Local and Minority Cultures in Japan 3 *unit(s)* (V)
- FORL 100W - Writing Workshop 3 *unit(s)* (WID)

Elective Courses (23-24 units)

Complete six courses:

- JPN 103 - Japanese Ideography and Calligraphy 4 *unit(s)*
- JPN 105 - Media Japanese 4 *unit(s)*
- JPN 107 - Japanese for Business Professionals 4 *unit(s)*
- JPN 110 - Japanese Linguistics 4 *unit(s)*
- JPN 120 - Japanese Literature and Translation 4 *unit(s)*
- JPN 130 - Readings in Japanese Culture 4 *unit(s)*
- JPN 135 - Japanese Culture and Society in Films 4 *unit(s)*
- JPN 140 - Japanese Drama and Lyrics 4 *unit(s)*
- JPN 150 - Japanese Narratives and Life stories 4 *unit(s)*
- JPN 160 - Special Topics in Japanese Studies 3 *unit(s)*

University Electives (13-14 units)

Total Units Required (120 units)

Journalism, BS

Since 1936, SJSU's School of Journalism and Mass Communications has built a global reputation for developing aspiring reporters and editors into top-notch professionals. Silicon Valley employers prefer to hire our grads because of their well-rounded cross-platform skills and strong, time-honored media ethics. JMC's lineup of student media outlets provides young journalists with venues to display and develop their talents in traditional, social and digital media.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	50
Major Preparation	15
Major Requirements	42
University Electives	13
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- JOUR 50 - Navigating the News 3 *unit(s)* (D)
- MCOM 63 - New Media 3 *unit(s)*
- MCOM 72 - Mass Communication and Society 3 *unit(s)* (D)
- MCOM 100W - Writing Workshop: Mass Communications 3 *unit(s)* (WID)
- MCOM 163 - Advanced New Media Technologies 3 *unit(s)*

Major Requirements (42 units)

Core Courses (33 units)

- JOUR 61 - Writing for Print, Electronic and Online Media 3 *unit(s)*
- JOUR 95 - Beginning Digital News Photography 3 *unit(s)*
- JOUR 132 - Magazine Reporting, Print and Online 3 *unit(s)*
- JOUR 133 - Editing and News Management 3 *unit(s)*
- JOUR 150 - News Media Management 3 *unit(s)*
Student must be an Editor on a Student Media Publication (JOUR 140A, JOUR 140B, JOUR 140C, or JOUR 140D) to enroll in JOUR 150.
- MCOM 101 - Media Law and Ethics 3 *unit(s)*
- MCOM 104 - Introduction to Mass Communications Research 3 *unit(s)*
- MCOM 111 - Mass Communications Internship 3 *unit(s)*
Student must be enrolled in MCOM 111 at the same time as their internships to receive credit.

Mass Communications (3 units)

Complete one course from:

- MCOM 105 - Lifestyles, Diversity and the Media 3 *unit(s)*
- MCOM 106 - Global Mass Communication 3 *unit(s)*

Media Production (6 units)

Complete two courses from the following list. The courses must be from different student media outlets. All courses are repeatable for credit.

- JOUR 140A - Student Media Production: Update News 1-3 *unit(s)* (3 units required)
- JOUR 140B - Student Media Production: Spartan Daily 1-3 *unit(s)* (3 units required)
- JOUR 140C - Student Media Production: The Spear 3 *unit(s)*
- JOUR 140D - Student Media Production: Magazine 3 *unit(s)*

Major Electives (9 units)

- JOUR 130 - Student Media Apprentice 3 *unit(s)*
- JOUR 136 - Newspaper and Magazine Design 3 *unit(s)*
- JOUR 140A - Student Media Production: Update News 1-3 *unit(s)* (repeatable up to 3 times for credit)
- JOUR 140B - Student Media Production: Spartan Daily 1-3 *unit(s)* (repeatable up to 3 times for credit)

- JOUR 140C - Student Media Production: The Spear 3 *unit(s)* (*repeatable up to 3 times for credit*)
- JOUR 140D - Student Media Production: Magazine 3 *unit(s)* (*repeatable up to 3 times for credit*)
- JOUR 150 - News Media Management 3 *unit(s)* (*repeatable up to 2 times for credit*)
- JOUR 167 - Television News Magazine 3 *unit(s)*
- JOUR 176A - Documentary Unit I - Short Form Feature Production 3 *unit(s)*
- JOUR 176B - Documentary Unit II - Long Form/Series Production 3 *unit(s)*
- MCOM 70 - Visual Communication for Modern Media 3 *unit(s)*
- MCOM 105 - Lifestyles, Diversity and the Media 3 *unit(s)*
- MCOM 106 - Global Mass Communication 3 *unit(s)*
- MCOM 107 - Audio Podcasting, Aesthetics and Invention 3 *unit(s)*
- MCOM 108 - Virtual Worlds, Virtual Reality and Mass Media 3 *unit(s)*
- MCOM 139 - Special Topics Seminar 3 *unit(s)*
- MCOM 180 - Independent Study 1-6 *unit(s)* (*repeatable up to 3 times for credit*)
- MCOM 180ITL - JMC International Experience 1-6 *unit(s)* (*repeatable up to 3 times for credit*)
- PR 195 - Strategic Sport Communication and Media 3 *unit(s)*

University Electives (13 units)

Academic Focus or Minor (optional) (0-13 units)

Optional: Complete an advisor-approved academic focus of 15 units consisting of a minor with approved courses. Academic foci include: Science, Justice Studies, Human Rights, Sports Journalism, or Visual Journalism & News Documentary. Must include at least 6 units of upper division. For more information, contact the major department. **An Academic focus will only appear on a student's diploma or transcript if it is an officially declared minor.**

Total Units Required (120 units)

Liberal Studies, Integrated Teacher Education Program Spanish Bilingual, BA

The Liberal Studies Teacher Preparation - Integrated Teacher Education Program Bilingual (LSTP-ITEPB) combines the study of academic subjects aligned to California standards for the K-8 curriculum with professional preparation courses and field experiences leading to a preliminary Multiple Subject Credential (MSC) plus a Bilingual Authorization in Spanish. Successful completion of this ITEP leads to a Bachelor of Arts degree in Liberal Studies, a Multiple Subject Teaching Credential, and a Bilingual Authorization in Spanish.

The Liberal Studies, Integrated Teacher Education Program Spanish Bilingual, offered by the Department of Humanities, is approved by the California Commission on Teacher Credentialing (CCTC) for waiver of the subject matter examination (CSET for Multiple Subjects) required to earn a teaching credential. The program incorporates Teacher Preparation and information on how to become a teacher including the application and admission to the Multiple Subject Credential program.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements

11

Major Core Requirements	87
Credential Courses	36
University Elective	1
Total	135

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (9 units)

Of the 39 units required by the university, 30 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions

The 6 units of American Institutions (US123) requirement may be satisfied in the major (if identified below) or by transfer from a community college or university. Other courses meet the American Institutions requirement, but may not include additional GE areas.

Consult major advisor for department recommended coursework to meet GE requirement.

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (87 units)

Reading, Language and Literature (21 units)

- CHAD 135 - Development of Language & Literacy in Children 3 *unit(s)*
- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (ENGL 1B also accepted for Transfer Students.)
- ENGL 112A - Children's Literature 3 *unit(s)*
- LING 107 - Patterns of English 3 *unit(s)*

History and Social Science (18 units)

- LSTP 10 - Chronicles of Education 3 *unit(s)* (C2)
- LSTP 139 - Education and (In)Equality 3 *unit(s)* (S)
- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)

American Institutions

Complete one sequence:

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D/US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D/US123)

U.S. History and Government (6 units)

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D/US1)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D/US23)

American Studies (6 units)

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)

Mathematics (9 units)

- MATH 12 - Number Systems 3 *unit(s)* (B4)
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*

- MATH 106 - Intuitive Geometry 3 *unit(s)*

Science (15 units)

- BIOL 21 - Human Biology 3 *unit(s)* (B2+B3) OR ENVS 10 - Life on a Changing Planet 3 *unit(s)* (B2)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- ENVS 158 - Environmental Education 3 *unit(s)*
- GEOL 103 - Earth Systems and the Environment 3 *unit(s)* (R)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1)

Visual and Performing Arts (9 units)

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*

Art Disciplines (6 units)

Complete six units in two different art disciplines:

- ART 39 - Multicultural Arts for Children 3 *unit(s)*
- ART 138 - Elementary Art Methods 3 *unit(s)*
- ART 139 - Teaching Diversity through Art 3 *unit(s)*
- CA 70 - Visual & Media Arts for K-8 Teachers 3 *unit(s)*
- CA 75 - Performing Arts for K-8 Teachers 3 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- MUSC 10B - Introduction to Music 3 *unit(s)* (C1)
- MUSC 185A - Music for Children 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*
- TA 167 - Theatre in Education 3 *unit(s)*

Physical Education and Health (3 units)

- CHAD 149 - Child Health and Activity 3 *unit(s)*

Human Development (3 units)

Complete one course from:

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)

Writing in the Disciplines (3 units)

- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (WID)

Field Study (6 units)

- LSTP 85A - Fieldwork in Humanities A 1 *unit(s)*

- LSTP 85B - Fieldwork in Humanities B *1 unit(s)*
- LSTP 85C - Fieldwork in Humanities C *1 unit(s)*
- LSTP 185 - Field Experience in Humanities *3 unit(s)*

Credential Courses (36 units)

Credential Core Courses (9 units)

- EDTE 224 - Seminar in Educational Psychology *3 unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education *3 unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy *3 unit(s)*

Methods (9 units)

- EDEL 108B - Curriculum: Science *3 unit(s)*
- EDEL 108C - Curriculum: Social Studies *3 unit(s)*
- EDEL 108D - Curriculum: Mathematics *3 unit(s)*

Student Teaching (18 units)

- EDEL 143A - Beginning Student-Teaching (Phase I) *1-6 unit(s) (4 units required)*
- EDEL 143B - Advanced Student-Teaching (Phase II) *1-10 unit(s) (10 units required)*
- EDTE 297B - Advanced Issues in Bilingual Education *1-3 unit(s) (Course taken twice.)*
- EDTE 297C - CalTPA Support *1 unit(s) (Course taken twice.)*

University Electives (1 unit)

Total Units Required (135 units)

- Freshmen and transfer students enter as Liberal Studies Teacher Preparation majors. Students apply for the ITEPB in the first semester of their junior year. Applicants must meet credential program standards and undergo screening for admission.
- All ITEPB students must take LSTP 139 and EDEL 108A in Spanish.
- All ITEPB students must do student teaching (EDEL 143A and EDEL 143B) in Spanish bilingual classrooms.
- All courses required for the credential must be completed with a grade of C or higher, unless otherwise noted. The cumulative GPA for all credential courses must be 3.0 or higher.

Liberal Studies, Integrated Teacher Education Program, BA

The Liberal Studies Teacher Preparation - Integrated Teacher Education Program (LSTP-ITEP) combines the study of academic subjects aligned to California standards for the K-8 curriculum with professional preparation courses and field experiences leading to a preliminary Multiple Subject Credential (MSC). Successful completion of this ITEP leads to both a Bachelor of Arts degree in Liberal Studies and a Multiple Subject Teaching Credential.

The Liberal Studies, Integrated Teacher Education Program, offered by the Department of Humanities, is approved by the California Commission on Teacher Credentialing (CCTC) for waiver of the subject matter examination (CSET

for Multiple Subjects) required to earn a teaching credential. The program incorporates Teacher Preparation and information on how to become a teacher including the application and admission to the Multiple Subject Credential program.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	11
Major Core Requirements	87
Credential Courses	36
University Elective	1
Total	135

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (9 units)

Of the 39 units required by the university, 30 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions

The 6 units of American Institutions (US123) requirement may be satisfied in the major (if identified below) or by transfer from a community college or university. Other courses meet the American Institutions requirement, but may not include additional GE areas.

Consult major advisor for department recommended coursework to meet GE requirement.

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (87 units)

Reading, Language and Literature (21 units)

- CHAD 135 - Development of Language & Literacy in Children 3 *unit(s)*
- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (ENGL 1B also accepted for Transfer Students.)
- ENGL 112A - Children's Literature 3 *unit(s)*
- LING 107 - Patterns of English 3 *unit(s)*

History and Social Science (18 units)

- LSTP 10 - Chronicles of Education 3 *unit(s)* (C2)
- LSTP 139 - Education and (In)Equality 3 *unit(s)* (S)
- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)

American Institutions

Complete one sequence:

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)

- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

American Studies (6 units)

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)

Mathematics (9 units)

- MATH 12 - Number Systems 3 *unit(s)* (B4)
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 106 - Intuitive Geometry 3 *unit(s)*

Science (15 units)

- BIOL 21 - Human Biology 3 *unit(s)* (B2+B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- ENVS 158 - Environmental Education 3 *unit(s)*
- GEOL 103 - Earth Systems and the Environment 3 *unit(s)* (R)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1)

Visual and Performing Arts (9 units)

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*

Art Disciplines (6 units)

Complete six units in two different art disciplines:

- ART 138 - Elementary Art Methods 3 *unit(s)*
- ART 139 - Teaching Diversity through Art 3 *unit(s)*
- CA 70 - Visual & Media Arts for K-8 Teachers 3 *unit(s)*
- CA 75 - Performing Arts for K-8 Teachers 3 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- MUSC 10B - Introduction to Music 3 *unit(s)* (C1)
- MUSC 185A - Music for Children 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*
- TA 167 - Theatre in Education 3 *unit(s)*

Physical Education and Health (3 units)

- CHAD 149 - Child Health and Activity 3 *unit(s)*

Human Development (3 units)

Complete one course from:

- CHAD 60 - Child Development 3 *unit(s)* (E)

- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)

Writing in the Disciplines (3 units)

- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (WID)

Field Study (6 units)

- LSTP 85A - Fieldwork in Humanities A 1 *unit(s)*
- LSTP 85B - Fieldwork in Humanities B 1 *unit(s)*
- LSTP 85C - Fieldwork in Humanities C 1 *unit(s)*
- LSTP 185 - Field Experience in Humanities 3 *unit(s)*

Credential Courses (36 units)

Credential Core Courses (9 units)

- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*

Methods (9 units)

- EDEL 108B - Curriculum: Science 3 *unit(s)*
- EDEL 108C - Curriculum: Social Studies 3 *unit(s)*
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*

Student Teaching (18 units)

- EDEL 143A - Beginning Student-Teaching (Phase I) 1-6 *unit(s)* (4 *units* required)
- EDEL 143B - Advanced Student-Teaching (Phase II) 1-10 *unit(s)* (10 *units* required)
- EDTE 297C - CalTPA Support 1 *unit(s)* (Course taken twice.)
- EDTE 297F - Field Support 1 *unit(s)* (Course taken twice.)

University Elective (1 unit)

Total Units Required (135 units)

- All freshmen and transfer students enter as Liberal Studies Teacher Preparation majors. Students apply for the ITEP in the first semester of their junior year. Applicants must meet credential program standards and undergo screening for admission.
- All courses required for the credential must be completed with a grade of C or higher, unless otherwise noted. The cumulative GPA for all credential courses must be 3.0 or higher.

Liberal Studies, Preparation for Teaching, BA

This major is designed for students interested in teaching in elementary school or middle school. The following course work, offered by the Department of Humanities, satisfies San José State University's requirements for a BA in Liberal Studies and is a program approved by the California Commission on Teacher Credentialing (CCTC) for waiver of the subject matter examination (CSET for Multiple Subjects) required to earn a teaching credential.

Maintaining a minimum grade point average (GPA) of at least 2.75 and completion of the program will not guarantee admission to the credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See Teacher Preparation: How To Become a Teacher for information on application and admission to credential programs.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	11
Major Core Requirements	96
University Electives	13
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (9 units)

Of the 39 units required by the university, 30 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions

The 6 units of American Institutions (US123) requirement may be satisfied in the major (if identified below) or by transfer from a community college or university. Other courses meet the American Institutions requirement, but may not include additional GE areas.

Consult major advisor for department recommended coursework to meet GE requirement.

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (96 units)

Reading, Language and Literature (15 units)

- CHAD 135 - Development of Language & Literacy in Children 3 *unit(s)*
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (*ENGL 1B also accepted for Transfer Students.*)
- ENGL 112A - Children's Literature 3 *unit(s)*
- LING 107 - Patterns of English 3 *unit(s)*

History and Social Science (15 units)

- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)* (S)
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)

Complete One Sequence:

American Studies

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)

Asian American History

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano History

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

Mathematics (9 units)

- MATH 12 - Number Systems 3 *unit(s)* (B4)
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 106 - Intuitive Geometry 3 *unit(s)*

Science (15 units)

- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- ENVS 158 - Environmental Education 3 *unit(s)*
- GEOL 103 - Earth Systems and the Environment 3 *unit(s)* (R)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1)

Complete one course:

- BIOL 21 - Human Biology 3 *unit(s)* (B2+B3)
- ENVS 10 - Life on a Changing Planet 3 *unit(s)* (B2)

Visual and Performing Arts (9 units)

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*

Art Disciplines (6 units)

Complete six units in two different art disciplines:

- ART 39 - Multicultural Arts for Children 3 *unit(s)*
- ART 138 - Elementary Art Methods 3 *unit(s)*
- ART 139 - Teaching Diversity through Art 3 *unit(s)*
- CA 70 - Visual & Media Arts for K-8 Teachers 3 *unit(s)*
- CA 75 - Performing Arts for K-8 Teachers 3 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- MUSC 10B - Introduction to Music 3 *unit(s)* (C1)
- MUSC 185A - Music for Children 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*
- TA 167 - Theatre in Education 3 *unit(s)*

Physical Education and Health (3 units)

- CHAD 149 - Child Health and Activity 3 *unit(s)*

Human Development (3 units)

Complete one course from:

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)

Introduction to Liberal Studies (3 units)

- LSTP 10 - Chronicles of Education 3 *unit(s)* (C2)

Area of Specialization (12 units)

- LSTP 139 - Education and (In)Equality 3 *unit(s)* (S)

Specialization Electives (9 units)

Complete 9 units from the following. Six units may be lower division.

- AMS 10 - Stories that Make America 3 *unit(s)* (C2 + US1)
- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- AMS 12 - Intro to US Popular Culture: Serious Fun! 3 *unit(s)* (C1)
- AMS 129 - The U.S. in a Global Context 3 *unit(s)*
- AMS 169 - The American Dream 3 *unit(s)* (S)
- AMS 179 - Issues in US Popular Culture 3 *unit(s)*
- CA 60 - Creativity Matters 3 *unit(s)* (E)
- CA 95 - Introduction to Queer Arts 3 *unit(s)* (C1)
- CA 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)* (V)
- CA 175 - Seminar in Creative Process 3 *unit(s)*
- CA 176 - Creativity and Creative Leadership 3 *unit(s)*
- HUM 95 - Introduction to Digital Humanities 3 *unit(s)*
- HUM 114 - Legacy of Asia 3 *unit(s)* (V)
- HUM 119 - Myths, Heroes, and Global Cultures 3 *unit(s)*
- HUM 159 - Nature and World Cultures 3 *unit(s)* (V)
- HUM 177A - Advanced Honors in Integrated Science, Social Science, and Humanities 6 *unit(s)*
- HUM 177B - Advanced Honors in Integrated Science, Social Science, and Humanities 3 *unit(s)* (RSV)
- RELS 70 - Gods, Guns, Gurus, Grails-World Religion 3 *unit(s)* (C2)
- RELS 90 - Bible History and Literature 3 *unit(s)* (C2)
- RELS 99 - Death, Dying and Religions 3 *unit(s)* (E)
- RELS 120 - Censors and Icons: Arts and Religion 3 *unit(s)*
- RELS 122 - Magic, Science and Religion 3 *unit(s)* (V)
- RELS 131 - Gender, Sexuality, and Religion 3 *unit(s)*
- RELS 142 - Contemporary Buddhism and its Roots 3 *unit(s)*

- RELS 145 - Middle Eastern Traditions 3 *unit(s)* (V)
- RELS 162 - Religion and Political Controversy in the US 3 *unit(s)* (S)
- RELS 191 - Religion in America 3 *unit(s)* (S)
- Any relevant HUM 160 course with advisor approval

Advanced Writing (3 units)

- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (WID)

Field Study (6 units)

- LSTP 85A - Fieldwork in Humanities A 1 *unit(s)*
- LSTP 85B - Fieldwork in Humanities B 1 *unit(s)*
- LSTP 85C - Fieldwork in Humanities C 1 *unit(s)*
- LSTP 185 - Field Experience in Humanities 3 *unit(s)*

Capstone Course (3 units)

- HUM 190 - Senior Seminar in Humanities 3 *unit(s)*

University Electives (13 units)

Total Units Required (120 units)

Linguistics, BA

The BA-Linguistics program, offered by the Department of Linguistics and Language Development, undertakes the scientific study of the nature, structure and function of language. Linguists study the origins of language, the meaning and history of words, variation in language, what language tells us about the workings of the human mind, and the practical aspects of language, including intercultural communication, language learning and teaching, and language as a conveyor of information in profound human arenas, such as medicine and law. Linguistics is also a central discipline that is involved in communicating with machines using natural language (i.e., artificial intelligence and machine recognition and synthesis of speech). The program offers state-of-the-art equipment for the acoustic and perceptual study of speech. Students in the major acquire critical thinking and problem-solving skills and receive excellent preparation for advanced studies in linguistics as well as anthropology, communication, education, law, and speech and hearing. Students with knowledge of more than one language have an excellent background for the study of linguistics.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	50
Major Preparation	0-10
Major Requirements	36

University Electives 24-34

Total 120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 unit(s) (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 unit(s) (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Recommended:

- LLD 100W - Writing Workshop 3 *unit(s)* (WID)

Major Preparation (0-10 units)

Must Meet One Of The Following Criteria:

For students for whom English is not the native language, one year of college level English study may fulfill this requirement.

- One year of college level language other than student's native language 10 *unit(s)*
- Demonstrated equivalent competence 0 *unit(s)*

- One year of college level American Sign Language 6 *unit(s)*

Major Requirements (36 units)

GE Basic Skills requirements must be completed prior to taking courses in the major.

Core Courses (21 units)

- LING 101 - Introduction to Linguistics 3 *unit(s)*
- LING 111 - Introduction to Linguistic Phonetics 3 *unit(s)*
- LING 112 - Introduction to Syntax 3 *unit(s)*
- LING 113 - Introduction to Phonology 3 *unit(s)*
- LING 114 - Introduction to Semantics and Discourse 3 *unit(s)*
- LING 125 - Introduction to Historical and Comparative Linguistics 3 *unit(s)*
- LING 162 - Introduction to Morphology 3 *unit(s)*

Electives in the Major (15 units)

By a careful selection of five additional electives in the major (below), students can choose coursework toward completion of a Certificate in Computational Linguistics or a Certificate in TESOL. Elective courses (up to 3 units) from other departments such as World Languages and Literatures, English, Communication Studies, Computer Science, Psychology, Philosophy, Anthropology and Communicative Disorders can also be taken with prior advisor approval.

Complete five courses from:

- LING 107 - Patterns of English 3 *unit(s)*
- LING 108 - Introduction to Second Language Development, Teaching, and Assessment 3 *unit(s)*
- LING 115 - Corpus Linguistics 3 *unit(s)*
- LING 122 - English as a World Language 3 *unit(s)* (V)
- LING 124 - Introduction to Speech Technology 3 *unit(s)*
- LING 161 - Psycholinguistics 3 *unit(s)*
- LING 165 - Introduction to Natural Language Processing 3 *unit(s)*
- LING 166 - Sociolinguistics 3 *unit(s)*
- LING 167 - Multilingualism and Language Contact 3 *unit(s)*

University Electives (24-34 units)

Upper Division electives may be required if 40 units are not taken as part of program.

Total Units Required (120 units)

Music, BA

The Bachelor of Arts in Music, offered by the School of Music, is designed for the student who seeks a liberal arts education with a major in music. The degree can be tailored to each student. A senior project is required.

An entrance audition is required. All students must complete the core classes and then select electives from at least two categories in consultation with the BA Music Advisor, and directed toward a specific Capstone project (MUSC 182). Four lower-division semesters of applied lessons are required for freshmen and sophomore majors. Ensemble participation is a co-requisite of applied lessons at all times.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Requirements	59
University Electives	23
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the preparation and major (all courses in preparation, and core) must be completed with a grade of "C- or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements And should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

This requirement is fulfilled in this major with:

- MUSC 100W - Written Communication II 3 *unit(s)* (*WID*)

Major Requirements (59 units)

Core Courses (43 units)

Lower Division (31 units)

- MUSC 1A - Music Theory IA 2 *unit(s)*
- MUSC 1B - Musicianship IB 1 *unit(s)*
- MUSC 2A - Music Theory IIA 2 *unit(s)*
- MUSC 2B - Musicianship IIB 1 *unit(s)*
- MUSC 3A - Music Theory IIIA 2 *unit(s)*
- MUSC 3B - Musicianship IIIB 1 *unit(s)*
- MUSC 4A - Music Theory 4A 2 *unit(s)* (*C1*)
- MUSC 4B - Musicianship 4B 1 *unit(s)* (*C1*)
- MUSC 12 - Medieval and Renaissance Music 3 *unit(s)* (*C2*)
- MUSC 13 - Music Technology 1 *unit(s)*
- MUSC 19 - Music in World Cultures 3 *unit(s)* (*C1*)
- MUSC 25A - Piano Proficiency I 1 *unit(s)*
- MUSC 25B - Piano Proficiency II 1 *unit(s)*
- MUSC 40A - Jazz Improvisation - I 2 *unit(s)*

Complete Four Units From:

- MUSC 29AX - Applied Electro-Acoustic 1 1 *unit(s)*
- MUSC 29BX - Applied Electro-Acoustic 2 1 *unit(s)*
- MUSC 29CX - Applied Electro-Acoustic 3 1 *unit(s)*
- MUSC 29DX - Applied Electro-Acoustic 4 1 *unit(s)*
- MUSC 30AX - Applied Piano 1 1 *unit(s)*
- MUSC 30BX - Applied Piano 2 1 *unit(s)*
- MUSC 30CX - Applied Piano 3 1 *unit(s)*
- MUSC 30DX - Applied Piano 3 1 *unit(s)*
- MUSC 33X - Applied Voice 1 *unit(s)*
- MUSC 33AX - Applied Voice 1 1 *unit(s)*
- MUSC 33BX - Applied Voice 2 1 *unit(s)*
- MUSC 33CX - Applied Voice 3 1 *unit(s)*
- MUSC 33DX - Applied Voice 4 1 *unit(s)*
- MUSC 34X - Strings 1 *unit(s)*
- MUSC 34AX - Strings 1 1 *unit(s)*
- MUSC 34BX - Strings 2 1 *unit(s)*
- MUSC 34CX - Strings 3 1 *unit(s)*
- MUSC 34DX - Strings 4 1 *unit(s)*
- MUSC 35AX - Woodwinds 1 1 *unit(s)*

- MUSC 35BX - Woodwinds 2 1 *unit(s)*
- MUSC 35CX - Woodwinds 3 1 *unit(s)*
- MUSC 35DX - Woodwinds 4 1 *unit(s)*
- MUSC 36BX - Brass 1 1 *unit(s)*
- MUSC 36CX - Brass 2 1 *unit(s)*
- MUSC 36DX - Brass 3 1 *unit(s)*
- MUSC 36EX - Brass 4 1 *unit(s)*
- MUSC 37AX - Applied Percussion 1 1 *unit(s)*
- MUSC 37BX - Applied Percussion 2 1 *unit(s)*
- MUSC 37CX - Applied Percussion 3 1 *unit(s)*
- MUSC 37DX - Applied Percussion 4 1 *unit(s)*

Complete Four Units From:

- MUSC 50A - ENS: Concert Choir 1 *unit(s)*
- MUSC 51A - ENS: University Chorales - Treble Choir 1 *unit(s)*
- MUSC 51B - ENS: University Chorales - Spartan Glee 1 *unit(s)*
- MUSC 52 - ENS: Opera Theater 1 *unit(s)*
- MUSC 53 - ENS: University Symphony Orchestra 1 *unit(s)*
- MUSC 54 - ENS: Symphonic Band 1 *unit(s)*
- MUSC 55 - ENS: Wind Ensemble 1 *unit(s)*
- MUSC 57 - ENS: Jazz Orchestra 1 *unit(s)*
- MUSC 59 - ENS: Afro-Latin Jazz Ensemble 1 *unit(s)*
- MUSC 60A - ENS: Choraliers 1 *unit(s)*
- MUSC 60C - ENS: Chamber Music 1 *unit(s)*
- MUSC 60E - ENS: Jazz Singers 1 *unit(s)*
- MUSC 60F - ENS: Small Jazz Ensembles 1 *unit(s)*
- MUSC 60H - ENS: Percussion Ensemble 1 *unit(s)*
- MUSC 60I - ENS: Jazz Ensemble 1 *unit(s)*
- MUSC 160S - ModLark - Mobile Device and Laptop Orchestra 1 *unit(s)*

Upper Division Courses (12 units)

- MUSC 110 - Baroque and Classical Music History 3 *unit(s)*
- MUSC 111 - Romantic and Modern Music History 3 *unit(s)*
- MUSC 117 - Music and Culture in Latin America 3 *unit(s)* (V)
- MUSC 120 - Worlds of Jazz 3 *unit(s)* (S)

Music Electives (15 units)

Take 15 Units from at Least Two of the Following Categories. Five units must be upper division. Select courses in consultation with a major advisor directed towards one of the capstone projects described below. All students must complete the capstone project under MUSC 182, listed below.

Theory, Arranging and Composition

- MUSC 102 - Orchestration 3 *unit(s)*
- MUSC 103 - Form and Analysis 3 *unit(s)*
- MUSC 104 - Counterpoint 3 *unit(s)*

- MUSC 109 - Film Scoring Techniques 3 *unit(s)*

History and Literature

- MUSC 142 - REP: Art Song Repertoire 1 *unit(s)*
- MUSC 144 - REP: Solo Lit., Performance, Pedagogy 1 *unit(s)*
- MUSC 145 - REP: Performance Concepts 2 *unit(s)*
- MUSC 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- MUSC 173 - Thinking About Contemporary World Arts 3 *unit(s)* (V)

Conducting

- MUSC 147A - Beginning Conducting 2 *unit(s)*
- MUSC 147B - Advanced Conducting: Instrumental 2 *unit(s)*
- MUSC 147C - Advanced Conducting: Choral 2 *unit(s)*

Improvisation

- MUSC 140B - Jazz Improvisation-II 2 *unit(s)*
- MUSC 140C - Jazz Improvisation-III 2 *unit(s)*

Music Technology

- MUSC 167 - Electro-Acoustic Music I 3 *unit(s)*
- MUSC 168 - Electro-Acoustic Music II 3 *unit(s)*
- MUSC 170A - Fundamentals of Sound Recording 3 *unit(s)*
- MUSC 170B - Intermediate Sound Recording 3 *unit(s)*
- MUSC 170C - Advanced Sound Recording Production 3 *unit(s)*
- MUSC 180 - Individual Studies 1-2 *unit(s)* (1 *unit* required)

Beginning Methods and Techniques

- MUSC 25C - Piano Proficiency III 1 *unit(s)*
- MUSC 26A - Voice Fundamentals 1 *unit(s)*
- MUSC 41A - Applied Lyric Diction 1 *unit(s)*
- MUSC 41B - Applied Lyric Diction 1 *unit(s)*
- MUSC 122A - Fundamental Techniques of Woodwinds: Flute, Clarinet, and Saxophone 1 *unit(s)*
- MUSC 122B - Fundamental Techniques and Literature: Instrumental 1 *unit(s)*
- MUSC 123A - Brass Fundamentals: Upper Brass 1 *unit(s)*
- MUSC 123B - Brass Fundamentals: Low Brass 1 *unit(s)*
- MUSC 125D - Percussion Techniques 1 *unit(s)*
- MUSC 127A - Fundamental Techniques and Literature: Instrumental Upper Strings - Violin and Viola 1 *unit(s)*
- MUSC 127B - Fundamental Techniques and Literature: Instrumental Lower Strings - Cello and Bass 1 *unit(s)*

Applied Lessons

By audition and special permission from the Director.

- MUSC 129A - Electro-Acoustics 5 1-2 *unit(s)*
- MUSC 130A - Piano 5 1-2 *unit(s)*
- MUSC 130B - Piano 6 1-2 *unit(s)*
- MUSC 130C - Piano 7 1-2 *unit(s)*
- MUSC 130D - Piano 8 1-2 *unit(s)*
- MUSC 133 - Voice 1-2 *unit(s)*
- MUSC 133A - Voice 5 1-2 *unit(s)*
- MUSC 133B - Voice 6 1-2 *unit(s)*
- MUSC 133C - Voice 7 1-2 *unit(s)*
- MUSC 133D - Voice 8 1-2 *unit(s)*
- MUSC 134 - Strings 1-2 *unit(s)*
- MUSC 134A - Strings 5 1-2 *unit(s)*
- MUSC 134B - Strings 6 1-2 *unit(s)*
- MUSC 134C - Strings 7 1-2 *unit(s)*
- MUSC 134D - Strings 8 1-2 *unit(s)*
- MUSC 135 - Woodwinds 1-2 *unit(s)*
- MUSC 135A - Woodwinds 5 1-2 *unit(s)*
- MUSC 135B - Woodwinds 6 1-2 *unit(s)*
- MUSC 135C - Woodwinds 7 1-2 *unit(s)*
- MUSC 135D - Woodwinds 8 1-2 *unit(s)*
- MUSC 136 - Brass 1-2 *unit(s)*
- MUSC 136B - Brass 5 1-2 *unit(s)*
- MUSC 136C - Brass 6 1-2 *unit(s)*
- MUSC 136D - Brass 7 1-2 *unit(s)*
- MUSC 136E - Brass 8 1-2 *unit(s)*
- MUSC 137 - Percussion 1-2 *unit(s)*
- MUSC 137A - Percussion 5 1-2 *unit(s)*
- MUSC 137B - Percussion 6 1-2 *unit(s)*
- MUSC 137C - Percussion 7 1-2 *unit(s)*
- MUSC 137D - Percussion 8 1-2 *unit(s)*
- MUSC 139A - Jazz Studies 5 1-2 *unit(s)*
- MUSC 139B - Jazz Studies 6 1-2 *unit(s)*
- MUSC 139C - Jazz Studies 7 1-2 *unit(s)*
- MUSC 139D - Jazz Studies 8 1-2 *unit(s)*

Chamber Music

Maximum of two units can be counted towards major

- MUSC 60A - ENS: Choraliers 1 *unit(s)*
- MUSC 60D - ENS: Collegium Musicum 1 *unit(s)*
- MUSC 60F - ENS: Small Jazz Ensembles 1 *unit(s)*
- MUSC 60H - ENS: Percussion Ensemble 1 *unit(s)*
- MUSC 60J - ENS: String Ensemble 1 *unit(s)*
- MUSC 60K - ENS: Brass Ensemble 1 *unit(s)*
- MUSC 60L - ENS: Woodwind Ensemble 1 *unit(s)*
- MUSC 60M - ENS: Saxophone Ensemble 1 *unit(s)*
- MUSC 60O - ENS: Trombone Ensemble 1 *unit(s)*
- MUSC 160A - ENS: Choraliers 1 *unit(s)*
- MUSC 160D - ENS: Collegium Musicum 1 *unit(s)*
- MUSC 160F - ENS: Small Jazz Ensembles 1 *unit(s)*

- MUSC 160H - ENS: Percussion Ensemble *1 unit(s)*
- MUSC 160J - ENS: String Ensemble *1 unit(s)*
- MUSC 160K - ENS: Brass Ensemble *1 unit(s)*
- MUSC 160L - Woodwind Ensemble *1 unit(s)*
- MUSC 160M - ENS: Saxophone Ensemble *1 unit(s)*
- MUSC 160O - Trombone Ensemble *1 unit(s)*

Ensembles

Maximum of four units. Ensembles required as co-requisite for those receiving applied lessons.

- MUSC 150A - ENS: Concert Choir *1 unit(s)*
- MUSC 153 - ENS: University Symphony Orchestra *1 unit(s)*
- MUSC 154 - ENS: Symphonic Band *1 unit(s)*
- MUSC 155 - Wind Ensemble *1 unit(s)*
- MUSC 157 - ENS: Jazz Orchestra *1 unit(s)*
- MUSC 159 - ENS: Afro-Latin Jazz Ensemble *1 unit(s)*
- MUSC 160F - ENS: Small Jazz Ensembles *1 unit(s)*
- MUSC 160I - ENS: Jazz Ensemble *1 unit(s)*
- MUSC 160S - ModLark - Mobile Device and Laptop Orchestra *1 unit(s)*

Capstone Experience (1 unit)

One of the following: undergraduate thesis, lecture/demonstration, or an appropriate project approved by the Director and area coordinator.

- MUSC 182 - Senior Project *1 unit(s)*

University Electives or Minor (23 units)

All university electives must be taken outside of music.

Total Units Required (120 units)

Music, Composition Concentration, BM

SJSU's Composition program, offered by the School of Music, provides a thorough and diverse exposure to the art of music composition and includes studies in electro-acoustics, recording technology, and scoring for film. Private composition lessons are at the heart of this degree program, with many opportunities for students to hear their works performed by students, faculty, and professional musicians. Composition students also meet regularly as a group with faculty and guest composers to hear and discuss their compositions. Students in this program complete both junior and senior projects in addition to the regular course of study.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	36
Major Preparation	11-14

Major Requirements	46
Concentration Requirements	24
University Electives	0-3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the preparation and major (all courses in preparation, and core) must be completed with a grade of "C or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (11-14 units)

- MUSC 1A - Music Theory IA 2 *unit(s)*
- MUSC 19 - Music in World Cultures 3 *unit(s)* (C1)
- MUSC 100W - Written Communication II 3 *unit(s)* (WID)
- MUSC 120 - Worlds of Jazz 3 *unit(s)* (S)

Piano Proficiency (0-3 units)

Students must also satisfy piano proficiency; this requirement may be satisfied with completion of:

- MUSC 25A - Piano Proficiency I 1 *unit(s)*
- MUSC 25B - Piano Proficiency II 1 *unit(s)*
- MUSC 25C - Piano Proficiency III 1 *unit(s)*

Major Requirements (70 units)

Core Courses (46 units)

- MUSC 1B - Musicianship IB 1 *unit(s)*
- MUSC 2A - Music Theory IIA 2 *unit(s)*
- MUSC 2B - Musicianship IIB 1 *unit(s)*
- MUSC 3A - Music Theory IIIA 2 *unit(s)*
- MUSC 3B - Musicianship IIIB 1 *unit(s)*
- MUSC 4A - Music Theory 4A 2 *unit(s)* (C1)
- MUSC 4B - Musicianship 4B 1 *unit(s)* (C1)
- MUSC 12 - Medieval and Renaissance Music 3 *unit(s)* (C2)
- MUSC 110 - Baroque and Classical Music History 3 *unit(s)*
- MUSC 111 - Romantic and Modern Music History 3 *unit(s)*
- MUSC 182 - Senior Project 1 *unit(s)*

Complete Eight Units From:

- MUSC 29 - Electro-Acoustics 1-2 *unit(s)*
- MUSC 29A - Electro-Acoustics 1 1-2 *unit(s)*
- MUSC 29B - Electro-Acoustics 2 1-2 *unit(s)*
- MUSC 29C - Electro-Acoustics 3 1-2 *unit(s)*
- MUSC 29D - Electro-Acoustics 4 1-2 *unit(s)*
- MUSC 30AX - Applied Piano 1 1 *unit(s)*
- MUSC 30BX - Applied Piano 2 1 *unit(s)*
- MUSC 30CX - Applied Piano 3 1 *unit(s)*
- MUSC 30DX - Applied Piano 3 1 *unit(s)*
- MUSC 33X - Applied Voice 1 *unit(s)*
- MUSC 33AX - Applied Voice 1 1 *unit(s)*
- MUSC 33BX - Applied Voice 2 1 *unit(s)*
- MUSC 33CX - Applied Voice 3 1 *unit(s)*
- MUSC 33DX - Applied Voice 4 1 *unit(s)*
- MUSC 34X - Strings 1 *unit(s)*
- MUSC 34AX - Strings 1 1 *unit(s)*
- MUSC 34BX - Strings 2 1 *unit(s)*
- MUSC 34CX - Strings 3 1 *unit(s)*
- MUSC 34DX - Strings 4 1 *unit(s)*
- MUSC 35AX - Woodwinds 1 1 *unit(s)*
- MUSC 35BX - Woodwinds 2 1 *unit(s)*
- MUSC 35CX - Woodwinds 3 1 *unit(s)*
- MUSC 35DX - Woodwinds 4 1 *unit(s)*

- MUSC 36BX - Brass 1 *1 unit(s)*
- MUSC 36CX - Brass 2 *1 unit(s)*
- MUSC 36DX - Brass 3 *1 unit(s)*
- MUSC 36EX - Brass 4 *1 unit(s)*
- MUSC 37AX - Applied Percussion 1 *1 unit(s)*
- MUSC 37BX - Applied Percussion 2 *1 unit(s)*
- MUSC 37CX - Applied Percussion 3 *1 unit(s)*
- MUSC 37DX - Applied Percussion 4 *1 unit(s)*
- MUSC 38BX - Applied Instruction in Music Composition 1 *1 unit(s)*
- MUSC 38CX - Applied Instruction in Music Composition 2 *1 unit(s)*
- MUSC 38DX - Applied Instruction in Music Composition 3 *1 unit(s)*
- MUSC 38EX - Applied Instruction in Music Composition 4 *1 unit(s)*
- MUSC 39AX - Jazz: Improvisation, Composition or Arranging 1 *1 unit(s)*
- MUSC 39BX - Jazz: Improvisation, Composition or Arranging 2 *1 unit(s)*
- MUSC 39CX - Jazz: Improvisation, Composition or Arranging 3 *1 unit(s)*
- MUSC 39DX - Jazz: Improvisation, Composition or Arranging 4 *1 unit(s)*

Complete Eight Units From:

- MUSC 138B - Composition 5 *1-2 unit(s)*
- MUSC 138C - Composition 6 *1-2 unit(s)*
- MUSC 138D - Composition 7 *1-2 unit(s)*
- MUSC 138E - Composition 8 *1-2 unit(s)*

Complete Four Units From:

- MUSC 50A - ENS: Concert Choir *1 unit(s)*
- MUSC 52 - ENS: Opera Theater *1 unit(s)*
- MUSC 53 - ENS: University Symphony Orchestra *1 unit(s)*
- MUSC 54 - ENS: Symphonic Band *1 unit(s)*
- MUSC 55 - ENS: Wind Ensemble *1 unit(s)*

Complete Four Units From:

- MUSC 150A - ENS: Concert Choir *1 unit(s)*
- MUSC 152 - ENS: Opera Theater *1 unit(s)*
- MUSC 153 - ENS: University Symphony Orchestra *1 unit(s)*
- MUSC 154 - ENS: Symphonic Band *1 unit(s)*
- MUSC 155 - Wind Ensemble *1 unit(s)*

Complete Two Units From:

- MUSC 40A - Jazz Improvisation - I *2 unit(s)*
- MUSC 140B - Jazz Improvisation-II *2 unit(s)*
- MUSC 140C - Jazz Improvisation-III *2 unit(s)*

Composition Concentration (20 units)

- MUSC 102 - Orchestration 3 *unit(s)*
- MUSC 103 - Form and Analysis 3 *unit(s)*
- MUSC 104 - Counterpoint 3 *unit(s)*
- MUSC 147A - Beginning Conducting 2 *unit(s)*
- MUSC 167 - Electro-Acoustic Music I 3 *unit(s)*
- MUSC 168 - Electro-Acoustic Music II 3 *unit(s)*
- MUSC 170A - Fundamentals of Sound Recording 3 *unit(s)*

Composition Electives (4 units)

Complete four units from:

- MUSC 109 - Film Scoring Techniques 3 *unit(s)*
- MUSC 122A - Fundamental Techniques of Woodwinds: Flute, Clarinet, and Saxophone 1 *unit(s)*
- MUSC 122B - Fundamental Techniques and Literature: Instrumental 1 *unit(s)*
- MUSC 123A - Brass Fundamentals: Upper Brass 1 *unit(s)*
- MUSC 123B - Brass Fundamentals: Low Brass 1 *unit(s)*
- MUSC 125D - Percussion Techniques 1 *unit(s)*
- MUSC 127A - Fundamental Techniques and Literature: Instrumental Upper Strings - Violin and Viola 1 *unit(s)*
- MUSC 127B - Fundamental Techniques and Literature: Instrumental Lower Strings - Cello and Bass 1 *unit(s)*
- MUSC 160A - ENS: Choraliers 1 *unit(s)*
- MUSC 160D - ENS: Collegium Musicum 1 *unit(s)*
- MUSC 160F - ENS: Small Jazz Ensembles 1 *unit(s)*
- MUSC 160J - ENS: String Ensemble 1 *unit(s)*
- MUSC 160K - ENS: Brass Ensemble 1 *unit(s)*
- MUSC 160L - Woodwind Ensemble 1 *unit(s)*
- MUSC 160M - ENS: Saxophone Ensemble 1 *unit(s)*
- MUSC 160O - Trombone Ensemble 1 *unit(s)*
- MUSC 170B - Intermediate Sound Recording 3 *unit(s)*
- MUSC 170C - Advanced Sound Recording Production 3 *unit(s)*

University Electives (0-3 units)

Total Units Required (120 units)

Music, Jazz Studies Concentration, BM

The Bachelor of Music, Concentration in Jazz Studies, offered by the School of Music, is tailored for students intending to pursue careers as professional jazz performers and composers. Emphasis is placed on jazz improvisation, jazz performance styles, jazz arranging/composition, and jazz pedagogy. Students receive in-depth private instruction and many ensembles develop students' abilities as improvising musicians. Additionally, the university's location allows almost limitless opportunities to secure performances in any of the Bay Area's numerous nightspots. Students are required to complete a senior recital in addition to the regular course of study.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements

36

Major Preparation	11-14
Major Core Requirements	47
Concentration Requirements	21
University Electives	2-5
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the preparation and major (all courses in preparation, and core) must be completed with a grade of "C or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (11-14 units)

- MUSC 1A - Music Theory IA 2 *unit(s)*
- MUSC 19 - Music in World Cultures 3 *unit(s)* (C1)
- MUSC 100W - Written Communication II 3 *unit(s)* (WID)

- MUSC 120 - Worlds of Jazz 3 *unit(s)* (S)

Piano Proficiency (0-3 units)

Students must also satisfy piano proficiency; this requirement may be satisfied with completion of:

- MUSC 25A - Piano Proficiency I 1 *unit(s)*
- MUSC 25B - Piano Proficiency II 1 *unit(s)*
- MUSC 25C - Piano Proficiency III 1 *unit(s)*

Major Requirements (68 units)

Core Courses (47 units)

- MUSC 1B - Musicianship IB 1 *unit(s)*
- MUSC 2A - Music Theory IIA 2 *unit(s)*
- MUSC 2B - Musicianship IIB 1 *unit(s)*
- MUSC 3A - Music Theory IIIA 2 *unit(s)*
- MUSC 3B - Musicianship IIIB 1 *unit(s)*
- MUSC 4A - Music Theory 4A 2 *unit(s)* (C1)
- MUSC 4B - Musicianship 4B 1 *unit(s)* (C1)
- MUSC 6 - Jazz Theory 2 *unit(s)*
- MUSC 12 - Medieval and Renaissance Music 3 *unit(s)* (C2)
- MUSC 13 - Music Technology 1 *unit(s)*
- MUSC 27A - Fundamentals of Jazz Keyboard I 1 *unit(s)*
- MUSC 27B - Fundamentals of Jazz Keyboard II 1 *unit(s)*
- MUSC 40A - Jazz Improvisation - I 2 *unit(s)*
- MUSC 110 - Baroque and Classical Music History 3 *unit(s)*
- MUSC 111 - Romantic and Modern Music History 3 *unit(s)*
- MUSC 182 - Senior Project 1 *unit(s)*

Complete Four Units From:

- MUSC 30AX - Applied Piano 1 1 *unit(s)*
- MUSC 30BX - Applied Piano 2 1 *unit(s)*
- MUSC 30CX - Applied Piano 3 1 *unit(s)*
- MUSC 30DX - Applied Piano 3 1 *unit(s)*
- MUSC 33X - Applied Voice 1 *unit(s)*
- MUSC 33AX - Applied Voice 1 1 *unit(s)*
- MUSC 33BX - Applied Voice 2 1 *unit(s)*
- MUSC 33CX - Applied Voice 3 1 *unit(s)*
- MUSC 33DX - Applied Voice 4 1 *unit(s)*
- MUSC 34X - Strings 1 *unit(s)*
- MUSC 34AX - Strings 1 1 *unit(s)*
- MUSC 34BX - Strings 2 1 *unit(s)*
- MUSC 34CX - Strings 3 1 *unit(s)*
- MUSC 34DX - Strings 4 1 *unit(s)*
- MUSC 35AX - Woodwinds 1 1 *unit(s)*
- MUSC 35BX - Woodwinds 2 1 *unit(s)*

- MUSC 35CX - Woodwinds 3 *1 unit(s)*
- MUSC 35DX - Woodwinds 4 *1 unit(s)*
- MUSC 36BX - Brass 1 *1 unit(s)*
- MUSC 36CX - Brass 2 *1 unit(s)*
- MUSC 36DX - Brass 3 *1 unit(s)*
- MUSC 36EX - Brass 4 *1 unit(s)*
- MUSC 37AX - Applied Percussion 1 *1 unit(s)*
- MUSC 37BX - Applied Percussion 2 *1 unit(s)*
- MUSC 37CX - Applied Percussion 3 *1 unit(s)*
- MUSC 37DX - Applied Percussion 4 *1 unit(s)*
- MUSC 38BX - Applied Instruction in Music Composition 1 *1 unit(s)*
- MUSC 38CX - Applied Instruction in Music Composition 2 *1 unit(s)*
- MUSC 38DX - Applied Instruction in Music Composition 3 *1 unit(s)*
- MUSC 38EX - Applied Instruction in Music Composition 4 *1 unit(s)*
- MUSC 39AX - Jazz: Improvisation, Composition or Arranging 1 *1 unit(s)*
- MUSC 39BX - Jazz: Improvisation, Composition or Arranging 2 *1 unit(s)*
- MUSC 39CX - Jazz: Improvisation, Composition or Arranging 3 *1 unit(s)*
- MUSC 39DX - Jazz: Improvisation, Composition or Arranging 4 *1 unit(s)*

Complete Four Units From:

- MUSC 50A - ENS: Concert Choir *1 unit(s)*
- MUSC 51A - ENS: University Chorales - Treble Choir *1 unit(s)*
- MUSC 51B - ENS: University Chorales - Spartan Glee *1 unit(s)*
- MUSC 53 - ENS: University Symphony Orchestra *1 unit(s)*
- MUSC 54 - ENS: Symphonic Band *1 unit(s)*
- MUSC 55 - ENS: Wind Ensemble *1 unit(s)*
- MUSC 57 - ENS: Jazz Orchestra *1 unit(s)*
- MUSC 59 - ENS: Afro-Latin Jazz Ensemble *1 unit(s)*
- MUSC 60F - ENS: Small Jazz Ensembles *1 unit(s)*
- MUSC 60I - ENS: Jazz Ensemble *1 unit(s)*

Complete Four Units From:

- MUSC 153 - ENS: University Symphony Orchestra *1 unit(s)*
- MUSC 154 - ENS: Symphonic Band *1 unit(s)*
- MUSC 155 - Wind Ensemble *1 unit(s)*
- MUSC 157 - ENS: Jazz Orchestra *1 unit(s)*
- MUSC 159 - ENS: Afro-Latin Jazz Ensemble *1 unit(s)*
- MUSC 160F - ENS: Small Jazz Ensembles *1 unit(s)*
- MUSC 160I - ENS: Jazz Ensemble *1 unit(s)*

Complete Eight Units From:

- MUSC 139A - Jazz Studies 5 *1-2 unit(s)*
- MUSC 139B - Jazz Studies 6 *1-2 unit(s)*
- MUSC 139C - Jazz Studies 7 *1-2 unit(s)*
- MUSC 139D - Jazz Studies 8 *1-2 unit(s)*

Jazz Studies Concentration (21 units)

- MUSC 102 - Orchestration 3 *unit(s)*
- MUSC 104 - Counterpoint 3 *unit(s)*
- MUSC 106A - Jazz Arranging I 2 *unit(s)*
- MUSC 106B - Jazz Arranging II 2 *unit(s)*
- MUSC 140B - Jazz Improvisation-II 2 *unit(s)*
- MUSC 140C - Jazz Improvisation-III 2 *unit(s)*
- MUSC 167 - Electro-Acoustic Music I 3 *unit(s)*
- MUSC 170A - Fundamentals of Sound Recording 3 *unit(s)*

Complete One Unit From:

- MUSC 60F - ENS: Small Jazz Ensembles 1 *unit(s)*
- MUSC 60I - ENS: Jazz Ensemble 1 *unit(s)*
- MUSC 160F - ENS: Small Jazz Ensembles 1 *unit(s)*
- MUSC 160I - ENS: Jazz Ensemble 1 *unit(s)*

University Electives (2-5 units)

Total Units Required (120 units)

Music, Music Education Concentration, BM

Students in the Music Education program complete the subject matter preparation for the California Teaching Credential in Music, K-12.

The BM-Bachelor of Music in Music Education, offered by the School of Music, is approved as subject matter preparation for a single subject credential by the California Commission on Teacher Credentialing (CCTC). Individuals who do not wish to complete one of the degree programs, or individuals seeking a single subject credential in subject areas not listed, must pass all portions of the appropriate Commission-approved subject matter examination(s).

Students receive 60-minute weekly lessons every semester in their area of specialty and must participate in the major ensemble of their respective applied area as a co-requisite. In the final semester of applied study, a solo recital is required.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	15-18
Major Core Requirements	43
Concentration Requirements	29-30
University Electives	3-7

Total

132

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the preparation and major (all courses in preparation, and core) must be completed with a grade of "C or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15-18 units)

- MUSC 1A - Music Theory IA 2 *unit(s)*
- MUSC 1B - Musicianship IB 1 *unit(s)*
- MUSC 2A - Music Theory IIA 2 *unit(s)*
- MUSC 19 - Music in World Cultures 3 *unit(s)* (C1)
- MUSC 28 - Guitar Fundamentals 1 *unit(s)*
- MUSC 100W - Written Communication II 3 *unit(s)* (WID)
- MUSC 120 - Worlds of Jazz 3 *unit(s)* (S)

Piano Proficiency (0-3 units)

Students must also satisfy piano proficiency; this requirement may be satisfied with completion of:

- MUSC 25A - Piano Proficiency I *1 unit(s)*
- MUSC 25B - Piano Proficiency II *1 unit(s)*
- MUSC 25C - Piano Proficiency III *1 unit(s)*

Major Requirements (72-73 units)

Core Courses (43 units)

- MUSC 2B - Musicianship IIB *1 unit(s)*
- MUSC 3A - Music Theory IIIA *2 unit(s)*
- MUSC 3B - Musicianship IIIB *1 unit(s)*
- MUSC 4A - Music Theory 4A *2 unit(s) (C1)*
- MUSC 4B - Musicianship 4B *1 unit(s) (C1)*
- MUSC 12 - Medieval and Renaissance Music *3 unit(s) (C2)*
- MUSC 110 - Baroque and Classical Music History *3 unit(s)*
- MUSC 111 - Romantic and Modern Music History *3 unit(s)*
- MUSC 182 - Senior Project *1 unit(s)*

Complete eight units (8 units)

- MUSC 30 - Piano *1-2 unit(s)*
- MUSC 30A - Piano 1 *1-2 unit(s)*
- MUSC 30B - Piano 2 *1-2 unit(s)*
- MUSC 30C - Piano 3 *1-2 unit(s)*
- MUSC 30D - Piano 4 *1-2 unit(s)*
- MUSC 33 - Voice *1-2 unit(s)*
- MUSC 33A - Voice 1 *1-2 unit(s)*
- MUSC 33B - Voice 2 *1-2 unit(s)*
- MUSC 33C - Voice 3 *1-2 unit(s)*
- MUSC 33D - Voice 4 *1-2 unit(s)*
- MUSC 34 - Strings *1-2 unit(s)*
- MUSC 34A - Strings 1 *1-2 unit(s)*
- MUSC 34B - Strings 2 *1-2 unit(s)*
- MUSC 34C - Strings 3 *1-2 unit(s)*
- MUSC 34D - Strings 4 *1-2 unit(s)*
- MUSC 35 - Woodwinds *1-2 unit(s)*
- MUSC 35A - Woodwinds 1 *1-2 unit(s)*
- MUSC 35B - Woodwinds 2 *1-2 unit(s)*
- MUSC 35C - Woodwinds 3 *1-2 unit(s)*
- MUSC 35D - Woodwinds 4 *1-2 unit(s)*
- MUSC 36 - Brass *1-2 unit(s)*
- MUSC 36B - Brass 1 *1-2 unit(s)*
- MUSC 36C - Brass 2 *1-2 unit(s)*
- MUSC 36D - Brass 3 *1-2 unit(s)*
- MUSC 36E - Brass 4 *1-2 unit(s)*
- MUSC 37 - Percussion *1-2 unit(s)*
- MUSC 37A - Percussion 1 *1-2 unit(s)*

- MUSC 37B - Percussion 2 1-2 *unit(s)*
- MUSC 37C - Percussion 3 1-2 *unit(s)*
- MUSC 37D - Percussion 4 1-2 *unit(s)*
- MUSC 38B - Composition 1 1-2 *unit(s)*
- MUSC 38C - Composition 2 1-2 *unit(s)*
- MUSC 38D - Composition 3 1-2 *unit(s)*
- MUSC 38E - Composition 4 1-2 *unit(s)*
- MUSC 39A - Jazz: Improvisation, Composition or Arranging 1 1-2 *unit(s)*
- MUSC 39B - Jazz: Improvisation, Composition or Arranging 2 1-2 *unit(s)*
- MUSC 39C - Jazz: Improvisation, Composition or Arranging 3 1-2 *unit(s)*
- MUSC 39D - Jazz: Improvisation, Composition and Arranging 4 1-2 *unit(s)*

Complete eight units (8 units)

- MUSC 130A - Piano 5 1-2 *unit(s)*
- MUSC 130B - Piano 6 1-2 *unit(s)*
- MUSC 130C - Piano 7 1-2 *unit(s)*
- MUSC 130D - Piano 8 1-2 *unit(s)*
- MUSC 133 - Voice 1-2 *unit(s)*
- MUSC 133A - Voice 5 1-2 *unit(s)*
- MUSC 133B - Voice 6 1-2 *unit(s)*
- MUSC 133C - Voice 7 1-2 *unit(s)*
- MUSC 133D - Voice 8 1-2 *unit(s)*
- MUSC 134 - Strings 1-2 *unit(s)*
- MUSC 134A - Strings 5 1-2 *unit(s)*
- MUSC 134B - Strings 6 1-2 *unit(s)*
- MUSC 134C - Strings 7 1-2 *unit(s)*
- MUSC 134D - Strings 8 1-2 *unit(s)*
- MUSC 135 - Woodwinds 1-2 *unit(s)*
- MUSC 135A - Woodwinds 5 1-2 *unit(s)*
- MUSC 135B - Woodwinds 6 1-2 *unit(s)*
- MUSC 135C - Woodwinds 7 1-2 *unit(s)*
- MUSC 135D - Woodwinds 8 1-2 *unit(s)*
- MUSC 136 - Brass 1-2 *unit(s)*
- MUSC 136B - Brass 5 1-2 *unit(s)*
- MUSC 136C - Brass 6 1-2 *unit(s)*
- MUSC 136D - Brass 7 1-2 *unit(s)*
- MUSC 136E - Brass 8 1-2 *unit(s)*
- MUSC 137 - Percussion 1-2 *unit(s)*
- MUSC 137A - Percussion 5 1-2 *unit(s)*
- MUSC 137B - Percussion 6 1-2 *unit(s)*
- MUSC 137C - Percussion 7 1-2 *unit(s)*
- MUSC 137D - Percussion 8 1-2 *unit(s)*
- MUSC 138B - Composition 5 1-2 *unit(s)*
- MUSC 138C - Composition 6 1-2 *unit(s)*
- MUSC 138D - Composition 7 1-2 *unit(s)*
- MUSC 138E - Composition 8 1-2 *unit(s)*
- MUSC 139A - Jazz Studies 5 1-2 *unit(s)*
- MUSC 139B - Jazz Studies 6 1-2 *unit(s)*
- MUSC 139C - Jazz Studies 7 1-2 *unit(s)*

- MUSC 139D - Jazz Studies 8 1-2 *unit(s)*

Complete four units (4 units)

- MUSC 50A - ENS: Concert Choir 1 *unit(s)*
- MUSC 53 - ENS: University Symphony Orchestra 1 *unit(s)*
- MUSC 54 - ENS: Symphonic Band 1 *unit(s)*
- MUSC 55 - ENS: Wind Ensemble 1 *unit(s)*

Complete four units (4 units)

- MUSC 150A - ENS: Concert Choir 1 *unit(s)*
- MUSC 153 - ENS: University Symphony Orchestra 1 *unit(s)*
- MUSC 154 - ENS: Symphonic Band 1 *unit(s)*
- MUSC 155 - Wind Ensemble 1 *unit(s)*

Complete two units (2 units)

- MUSC 40A - Jazz Improvisation - I 2 *unit(s)*
- MUSC 140B - Jazz Improvisation-II 2 *unit(s)*
- MUSC 140C - Jazz Improvisation-III 2 *unit(s)*

Music Education Concentration (29-30 units)

Select an area of specialization from either the Instrumental or the Choral/General below. All students must take the Common Courses below.

Common Courses (15-16 units)

- MUSC 103 - Form and Analysis 3 *unit(s)*
- MUSC 147A - Beginning Conducting 2 *unit(s)*
- MUED 140 - Foundations of Music Education 3 *unit(s)*
- MUED 142 - Introduction to Music Education: Early Field Experience 1 *unit(s)*

Complete one course (2 units)

- MUSC 147B - Advanced Conducting: Instrumental 2 *unit(s)*
- MUSC 147C - Advanced Conducting: Choral 2 *unit(s)*

Complete one course (2-3 units)

- MUSC 102 - Orchestration 3 *unit(s)*
- MUSC 106A - Jazz Arranging I 2 *unit(s)*
- MUSC 106B - Jazz Arranging II 2 *unit(s)*

Breadth Requirement (2 units)

By advisement select two units of large or chamber ensemble outside of major performing area to satisfy breadth requirement *2 unit(s)*

Instrumental (14 units)

- MUSC 26A - Voice Fundamentals *1 unit(s)*
- MUSC 122A - Fundamental Techniques of Woodwinds: Flute, Clarinet, and Saxophone *1 unit(s)*
- MUSC 122B - Fundamental Techniques and Literature: Instrumental *1 unit(s)*
- MUSC 123A - Brass Fundamentals: Upper Brass *1 unit(s)*
- MUSC 123B - Brass Fundamentals: Low Brass *1 unit(s)*
- MUSC 125D - Percussion Techniques *1 unit(s)*
- MUSC 126 - Marching Band Techniques *1 unit(s)*
- MUSC 127A - Fundamental Techniques and Literature: Instrumental Upper Strings - Violin and Viola *1 unit(s)*
- MUSC 127B - Fundamental Techniques and Literature: Instrumental Lower Strings - Cello and Bass *1 unit(s)*
- MUED 170A - Teaching Instrumental Music *2 unit(s)*
- MUED 175 - Practicum in Music Education *3 unit(s)*

Choral/General (14 units)

- MUSC 41A - Applied Lyric Diction *1 unit(s)*
- MUSC 41B - Applied Lyric Diction *1 unit(s)*
- MUSC 122A - Fundamental Techniques of Woodwinds: Flute, Clarinet, and Saxophone *1 unit(s)*
- MUSC 123A - Brass Fundamentals: Upper Brass *1 unit(s)*
- MUSC 125D - Percussion Techniques *1 unit(s)*
- MUSC 185A - Music for Children *3 unit(s)*
- MUED 170B - Teaching Choral Music *2 unit(s)*
- MUED 175 - Practicum in Music Education *3 unit(s)*

Complete one course (1 unit)

- MUSC 127A - Fundamental Techniques and Literature: Instrumental Upper Strings - Violin and Viola *1 unit(s)*
- MUSC 127B - Fundamental Techniques and Literature: Instrumental Lower Strings - Cello and Bass *1 unit(s)*

University Electives (3-7 units)

Total Units Required (132 units)

Music, Performance Concentration, BM

The Bachelor of Music, Concentration in Performance, offered by the School of Music, is designed for students intending to pursue careers as professional singers or instrumentalists. In addition to the core music courses, the program includes weekly 60-minute private lessons and participation in large ensembles such as choirs, bands, symphony orchestra, and opera theater. Students also perform regularly as soloists and as chamber musicians, both in closed studio classes and in public recitals. In addition to their regular course of study, students are required to present both junior and senior recitals.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	36
Major Preparation	11-14
Major Requirements	53
Applied Area	17
University Electives	0-3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the preparation and major (all courses in preparation, and core) must be completed with a grade of "C or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (11-14 units)

- MUSC 1A - Music Theory IA 2 *unit(s)*

- MUSC 19 - Music in World Cultures 3 *unit(s)* (C1)
- MUSC 100W - Written Communication II 3 *unit(s)* (WID)
- MUSC 120 - Worlds of Jazz 3 *unit(s)* (S)

Piano Proficiency (0-3 units)

Students must also satisfy piano proficiency; this requirement may be satisfied with completion of:

- MUSC 25A - Piano Proficiency I 1 *unit(s)*
- MUSC 25B - Piano Proficiency II 1 *unit(s)*
- MUSC 25C - Piano Proficiency III 1 *unit(s)*

Major Requirements (70 units)

Core Courses (53 units)

- MUSC 1B - Musicianship IB 1 *unit(s)*
- MUSC 2A - Music Theory IIA 2 *unit(s)*
- MUSC 2B - Musicianship IIB 1 *unit(s)*
- MUSC 3A - Music Theory IIIA 2 *unit(s)*
- MUSC 3B - Musicianship IIIB 1 *unit(s)*
- MUSC 4A - Music Theory 4A 2 *unit(s)* (C1)
- MUSC 4B - Musicianship 4B 1 *unit(s)* (C1)
- MUSC 12 - Medieval and Renaissance Music 3 *unit(s)* (C2)
- MUSC 13 - Music Technology 1 *unit(s)*
- MUSC 40A - Jazz Improvisation - I 2 *unit(s)*
- MUSC 110 - Baroque and Classical Music History 3 *unit(s)*
- MUSC 111 - Romantic and Modern Music History 3 *unit(s)*
- MUSC 182 - Senior Project 1 *unit(s)*

Complete Six Units From:

- MUSC 102 - Orchestration 3 *unit(s)*
- MUSC 103 - Form and Analysis 3 *unit(s)*
- MUSC 104 - Counterpoint 3 *unit(s)*

Complete Eight Units From:

- MUSC 30 - Piano 1-2 *unit(s)*
- MUSC 30A - Piano 1 1-2 *unit(s)*
- MUSC 30B - Piano 2 1-2 *unit(s)*
- MUSC 30C - Piano 3 1-2 *unit(s)*
- MUSC 30D - Piano 4 1-2 *unit(s)*
- MUSC 33 - Voice 1-2 *unit(s)*
- MUSC 33A - Voice 1 1-2 *unit(s)*
- MUSC 33B - Voice 2 1-2 *unit(s)*
- MUSC 33C - Voice 3 1-2 *unit(s)*
- MUSC 33D - Voice 4 1-2 *unit(s)*

- MUSC 34 - Strings 1-2 *unit(s)*
- MUSC 34A - Strings 1 1-2 *unit(s)*
- MUSC 34B - Strings 2 1-2 *unit(s)*
- MUSC 34C - Strings 3 1-2 *unit(s)*
- MUSC 34D - Strings 4 1-2 *unit(s)*
- MUSC 35 - Woodwinds 1-2 *unit(s)*
- MUSC 35A - Woodwinds 1 1-2 *unit(s)*
- MUSC 35B - Woodwinds 2 1-2 *unit(s)*
- MUSC 35C - Woodwinds 3 1-2 *unit(s)*
- MUSC 35D - Woodwinds 4 1-2 *unit(s)*
- MUSC 36 - Brass 1-2 *unit(s)*
- MUSC 36B - Brass 1 1-2 *unit(s)*
- MUSC 36C - Brass 2 1-2 *unit(s)*
- MUSC 36D - Brass 3 1-2 *unit(s)*
- MUSC 36E - Brass 4 1-2 *unit(s)*
- MUSC 37 - Percussion 1-2 *unit(s)*
- MUSC 37A - Percussion 1 1-2 *unit(s)*
- MUSC 37B - Percussion 2 1-2 *unit(s)*
- MUSC 37C - Percussion 3 1-2 *unit(s)*
- MUSC 37D - Percussion 4 1-2 *unit(s)*

Complete Eight Units From:

- MUSC 130A - Piano 5 1-2 *unit(s)*
- MUSC 130B - Piano 6 1-2 *unit(s)*
- MUSC 130C - Piano 7 1-2 *unit(s)*
- MUSC 130D - Piano 8 1-2 *unit(s)*
- MUSC 133 - Voice 1-2 *unit(s)*
- MUSC 133A - Voice 5 1-2 *unit(s)*
- MUSC 133B - Voice 6 1-2 *unit(s)*
- MUSC 133C - Voice 7 1-2 *unit(s)*
- MUSC 133D - Voice 8 1-2 *unit(s)*
- MUSC 134 - Strings 1-2 *unit(s)*
- MUSC 134A - Strings 5 1-2 *unit(s)*
- MUSC 134B - Strings 6 1-2 *unit(s)*
- MUSC 134C - Strings 7 1-2 *unit(s)*
- MUSC 134D - Strings 8 1-2 *unit(s)*
- MUSC 135 - Woodwinds 1-2 *unit(s)*
- MUSC 135A - Woodwinds 5 1-2 *unit(s)*
- MUSC 135B - Woodwinds 6 1-2 *unit(s)*
- MUSC 135C - Woodwinds 7 1-2 *unit(s)*
- MUSC 135D - Woodwinds 8 1-2 *unit(s)*
- MUSC 136 - Brass 1-2 *unit(s)*
- MUSC 136B - Brass 5 1-2 *unit(s)*
- MUSC 136C - Brass 6 1-2 *unit(s)*
- MUSC 136D - Brass 7 1-2 *unit(s)*
- MUSC 136E - Brass 8 1-2 *unit(s)*
- MUSC 137 - Percussion 1-2 *unit(s)*
- MUSC 137A - Percussion 5 1-2 *unit(s)*
- MUSC 137B - Percussion 6 1-2 *unit(s)*

- MUSC 137C - Percussion 7 1-2 *unit(s)*
- MUSC 137D - Percussion 8 1-2 *unit(s)*

Complete Four Units From:

- MUSC 50A - ENS: Concert Choir 1 *unit(s)*
- MUSC 52 - ENS: Opera Theater 1 *unit(s)*
- MUSC 53 - ENS: University Symphony Orchestra 1 *unit(s)*
- MUSC 54 - ENS: Symphonic Band 1 *unit(s)*
- MUSC 55 - ENS: Wind Ensemble 1 *unit(s)*

Complete Four Units From:

- MUSC 150A - ENS: Concert Choir 1 *unit(s)*
- MUSC 152 - ENS: Opera Theater 1 *unit(s)*
- MUSC 153 - ENS: University Symphony Orchestra 1 *unit(s)*
- MUSC 154 - ENS: Symphonic Band 1 *unit(s)*
- MUSC 155 - Wind Ensemble 1 *unit(s)*

Applied Area (17 units)

Choose an area of specialization below. Area specializations are a cluster of courses departments use for advising purposes, they will not appear on transcripts or diplomas. See Advisor for more details.

Voice (17 units)

Voice students must complete a language proficiency in either Italian, German, or French. This may be satisfied with four years of secondary study, a proficiency exam, or one year of college study

- MUSC 41A - Applied Lyric Diction 1 *unit(s)*
- MUSC 41B - Applied Lyric Diction 1 *unit(s)*
- MUSC 142 - REP: Art Song Repertoire 1 *unit(s)* (*Students must take MUSC 142 twice for a total of 2 units.*)
- MUSC 144 - REP: Solo Lit., Performance, Pedagogy 1 *unit(s)* (*Students must take MUSC 144 two times for a total of 2 units.*)
- MUSC 146 - Introduction to Applied Music Pedagogy 2 *unit(s)*
- MUSC 147A - Beginning Conducting 2 *unit(s)*

Complete Seven Units by Advisement From:

- MUSC 52 - ENS: Opera Theater 1 *unit(s)* (*2 units required*)
- MUSC 60A - ENS: Choraliers 1 *unit(s)*
- MUSC 60D - ENS: Collegium Musicum 1 *unit(s)*
- MUSC 61 - REP: Styles and Interpretation of Opera I 1 *unit(s)*
- MUSC 63 - REP: Styles and Interpretation of Opera II 1 *unit(s)*
- MUSC 102 - Orchestration 3 *unit(s)*
- MUSC 103 - Form and Analysis 3 *unit(s)*
- MUSC 104 - Counterpoint 3 *unit(s)*
- MUSC 124 - Special Topics in Music History/Literature 1-3 *unit(s)*
- MUSC 147B - Advanced Conducting: Instrumental 2 *unit(s)*

- MUSC 147C - Advanced Conducting: Choral 2 *unit(s)*
- MUSC 152 - ENS: Opera Theater 1 *unit(s)*
- MUSC 160A - ENS: Choraliers 1 *unit(s)*
- MUSC 160D - ENS: Collegium Musicum 1 *unit(s)*
- MUSC 161 - REP: Styles and Interpretation of Opera I 1 *unit(s)*
- MUSC 163 - REP: Styles and Interpretation of Opera II 1 *unit(s)* (1-2 *units required*)
- MUSC 180 - Individual Studies 1-2 *unit(s)*
- MUSC 190A - Honors Project 1 *unit(s)*
- MUSC 190B - Honors Project 2 *unit(s)*

Keyboard (17 units)

- MUSC 143 - REP: Collaborative Keyboard Performance 1 *unit(s)* (*Keyboard majors must take MUSC 143 a minimum of four times for a total of 4 units. MUSC 160C may be used as a substitution for the major ensemble requirement.*)
- MUSC 144 - REP: Solo Lit., Performance, Pedagogy 1 *unit(s)* (*Keyboard majors must take MUSC 144 four times for a total of 4 units.*)
- MUSC 145 - REP: Performance Concepts 2 *unit(s)*
- MUSC 146 - Introduction to Applied Music Pedagogy 2 *unit(s)*
- MUSC 147A - Beginning Conducting 2 *unit(s)*

Complete Three Units by Advisement From:

- MUSC 60C - ENS: Chamber Music 1 *unit(s)*
- MUSC 60D - ENS: Collegium Musicum 1 *unit(s)*
- MUSC 102 - Orchestration 3 *unit(s)*
- MUSC 103 - Form and Analysis 3 *unit(s)*
- MUSC 104 - Counterpoint 3 *unit(s)*
- MUSC 124 - Special Topics in Music History/Literature 1-3 *unit(s)*
- MUSC 146A - Pedagogy - Piano 2 *unit(s)*
- MUSC 147B - Advanced Conducting: Instrumental 2 *unit(s)*
- MUSC 160C - ENS: Chamber Music 1 *unit(s)*
- MUSC 160D - ENS: Collegium Musicum 1 *unit(s)*
- MUSC 180 - Individual Studies 1-2 *unit(s)*
- MUSC 190A - Honors Project 1 *unit(s)*
- MUSC 190B - Honors Project 2 *unit(s)*

Symphonic Instrumental (17 units)

- MUSC 146 - Introduction to Applied Music Pedagogy 2 *unit(s)*
- MUSC 147A - Beginning Conducting 2 *unit(s)*

Complete Six Units by Advisement From:

- MUSC 60C - ENS: Chamber Music 1 *unit(s)*
- MUSC 60D - ENS: Collegium Musicum 1 *unit(s)*
- MUSC 60H - ENS: Percussion Ensemble 1 *unit(s)*
- MUSC 60J - ENS: String Ensemble 1 *unit(s)*
- MUSC 60K - ENS: Brass Ensemble 1 *unit(s)*

- MUSC 60L - ENS: *Woodwind Ensemble 1 unit(s)*
- MUSC 60M - ENS: *Saxophone Ensemble 1 unit(s)*
- MUSC 160C - ENS: *Chamber Music 1 unit(s)*
- MUSC 160D - ENS: *Collegium Musicum 1 unit(s)*
- MUSC 160H - ENS: *Percussion Ensemble 1 unit(s)*
- MUSC 160J - ENS: *String Ensemble 1 unit(s)*
- MUSC 160K - ENS: *Brass Ensemble 1 unit(s)*
- MUSC 160L - ENS: *Woodwind Ensemble 1 unit(s)*
- MUSC 160M - ENS: *Saxophone Ensemble 1 unit(s)*

Complete Seven Units by Advisement From:

- MUSC 102 - *Orchestration 3 unit(s)*
- MUSC 103 - *Form and Analysis 3 unit(s)*
- MUSC 104 - *Counterpoint 3 unit(s)*
- MUSC 117 - *Music and Culture in Latin America 3 unit(s) (V)*
- MUSC 124 - *Special Topics in Music History/Literature 1-3 unit(s)*
- MUSC 140B - *Jazz Improvisation-II 2 unit(s)*
- MUSC 140C - *Jazz Improvisation-III 2 unit(s)*
- MUSC 147B - *Advanced Conducting: Instrumental 2 unit(s)*
- MUSC 147C - *Advanced Conducting: Choral 2 unit(s)*
- MUSC 153 - ENS: *University Symphony Orchestra 1 unit(s)*
- MUSC 154 - ENS: *Symphonic Band 1 unit(s)*
- MUSC 155 - *Wind Ensemble 1 unit(s)*
- MUSC 157 - ENS: *Jazz Orchestra 1 unit(s)*
- MUSC 159 - ENS: *Afro-Latin Jazz Ensemble 1 unit(s)*
- MUSC 160C - ENS: *Chamber Music 1 unit(s)*
- MUSC 160D - ENS: *Collegium Musicum 1 unit(s)*
- MUSC 160F - ENS: *Small Jazz Ensembles 1 unit(s)*
- MUSC 160J - ENS: *String Ensemble 1 unit(s)*
- MUSC 160L - ENS: *Woodwind Ensemble 1 unit(s)*
- MUSC 160M - ENS: *Saxophone Ensemble 1 unit(s)*
- MUSC 160O - *Trombone Ensemble 1 unit(s)*
- MUSC 170A - *Fundamentals of Sound Recording 3 unit(s)*
- MUSC 180 - *Individual Studies 1-2 unit(s)*
- MUSC 190A - *Honors Project 1 unit(s)*
- MUSC 190B - *Honors Project 2 unit(s)*

University Electives (0-3 units)

Total Units Required (120 units)

Philosophy, BA

Philosophy is an adventure of the mind. Philosophy majors read and discuss ideas generated by some of the greatest thinkers in history, putting these ideas in conversation with each other and with contemporary concerns. The Department of Philosophy also offers Philosophy students a look at theoretical and practical problems from a philosophical perspective.

Because the study of philosophy develops a student's ability to analyze ideas and arguments, to think critically, and to write well, a major in philosophy provides skills that are valued by many kinds of employers and serve as appropriate pre-professional preparation for various fields, including law, medicine, psychology and theology. Additionally, the major provides preparation for students interested in obtaining a background for graduate work in philosophy.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Requirements	33
University Electives	52
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or Specific questions.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Major Requirements (33 units)

- PHIL 70A - Ancient Philosophy 3 unit(s) (C2)
- PHIL 70B - Early Modern Philosophy 3 unit(s) (C2)

Complete One Course From:

- PHIL 9 - Mathematics and Logic for General Education 3 unit(s) (B4)
- PHIL 57 - Logic and Critical Reasoning 3 unit(s) (A3)
- PHIL 157 - Intermediate Logic & Language Analysis 3 unit(s) (PHIL 157 requires permission from advisor)

Complete One Seminar Course From:

- PHIL 190 - Seminar in Philosophical Classics 3 unit(s)
- PHIL 195 - Seminar in Philosophy of Law 3 unit(s)
- PHIL 290 - Advanced Seminar in a Selected Philosopher or Tradition 3 unit(s) (GWAR)
- PHIL 291 - Advanced Seminar in Epistemology and Metaphysics 3 unit(s) (GWAR)
- PHIL 292 - Advanced Seminar in Ethics or Aesthetics 3 unit(s)
- PHIL 293 - Advanced Seminar in Logical Theory 3 unit(s)

Philosophy Electives (21 units)

Complete seven upper division Philosophy courses, which may include SJSU Studies Philosophy courses.

Students may substitute a Graduate Level Philosophy course for one of the seven upper division Philosophy courses with permission from the advisor.

University Electives (52 units)

At least 4 units must be Upper Division

Total Units Required (120 units)

Public Relations, BS

The BS Public Relations, offered by the School of Journalism and Mass Communications, prepares students for the broad and exciting field of integrated strategic communication. Students learn how to promote an organization's brand through news outlets and social media influencers, how to create and implement marketing communication assets, and how to plan and execute public relations campaigns. The program includes courses in research, web analytics, strategic writing, content creation, event planning, social media, digital marketing, among other specialized courses in employee communications and sports public relations. Graduates work in agencies and corporations throughout the Silicon Valley, the United States, and worldwide in a wide variety of specializations from high tech to healthcare to sports and entertainment.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements

50

Major Preparation	15
Major Requirements	42
University Electives	13
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15 units)

- ADV 91 - Introduction to Advertising 3 *unit(s)*
- MCOM 63 - New Media 3 *unit(s)*
- MCOM 72 - Mass Communication and Society 3 *unit(s)* (D)
- MCOM 100W - Writing Workshop: Mass Communications 3 *unit(s)* (WID)
- PR 99 - Introduction to Public Relations 3 *unit(s)*

Major Requirements (42 units)

MCOM 199A / MCOM 199B substitutes for MCOM 111 and PR 199 by invitation.

- MCOM 101 - Media Law and Ethics 3 *unit(s)*
- MCOM 104 - Introduction to Mass Communications Research 3 *unit(s)*
- MCOM 111 - Mass Communications Internship 3 *unit(s)*
- JOUR 61 - Writing for Print, Electronic and Online Media 3 *unit(s)*
- PR 190 - Media and Influencer Relations 3 *unit(s)*
- PR 191 - Strategic Content Creation 3 *unit(s)*
- PR 192 - Case Studies in Strategic Communication 3 *unit(s)*
- PR 197 - Introduction to Corporate Internal Communication 3 *unit(s)*
- PR 199 - Campaign Planning and Management 3 *unit(s)*

Mass Communications Elective (3 units)

- MCOM 70 - Visual Communication for Modern Media 3 *unit(s)*
- MCOM 105 - Lifestyles, Diversity and the Media 3 *unit(s)*
- MCOM 106 - Global Mass Communication 3 *unit(s)*

Approved JMC Electives (12 units)

- Approved electives in the School of Journalism and Mass Communications (JMC), including courses in journalism, advertising, public relations or mass communications.

University Electives (13 units)

Total Units Required (120 units)

Public Relations, BS (SJSU Online)

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

The BS Public Relations, offered by the School of Journalism and Mass Communications, prepares students for the broad and exciting field of integrated strategic communication. Students learn how to promote an organization's brand through news outlets and social media influencers, how to create and implement marketing communication assets, and how to plan and execute public relations campaigns. The program includes courses in research, web analytics, strategic writing, content creation, event planning, social media, digital marketing, among other specialized courses in employee communications and sports public relations. Graduates work in agencies and corporations throughout the Silicon Valley, the United States, and worldwide in a wide variety of specializations from high tech to healthcare to sports and entertainment.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
SJSU Studies	9
Major Preparation	9
Major Requirements	39
University Electives	3
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units).
- All four CSU-approved Basics Skills courses must be completed with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
- GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.
- Completion of at least 9 units of the following courses (or equivalents) with a grade of "C-" or better:
 - MCOM 63 - New Media
 - MCOM 72 - Mass Communication and Society
 - JOUR 61 - Writing for Print, Electronic and Online Media

University Requirements (9 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with a major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (9 units)

- ADV 91 - Introduction to Advertising 3 *unit(s)*
- MCOM 100W - Writing Workshop: Mass Communications 3 *unit(s)* (WID)
- PR 99 - Introduction to Public Relations 3 *unit(s)*

Major Requirements (39 units)

- MCOM 101 - Media Law and Ethics 3 *unit(s)*
- MCOM 104 - Introduction to Mass Communications Research 3 *unit(s)*
- MCOM 111 - Mass Communications Internship 3 *unit(s)*
- PR 190 - Media and Influencer Relations 3 *unit(s)*
- PR 191 - Strategic Content Creation 3 *unit(s)*
- PR 192 - Case Studies in Strategic Communication 3 *unit(s)*
- PR 197 - Introduction to Corporate Internal Communication 3 *unit(s)*
- PR 199 - Campaign Planning and Management 3 *unit(s)*

Mass Communications Elective (3 units)

- MCOM 70 - Visual Communication for Modern Media 3 *unit(s)*
- MCOM 105 - Lifestyles, Diversity and the Media 3 *unit(s)*
- MCOM 106 - Global Mass Communication 3 *unit(s)*

Approved JMC Electives (12 units)

- Approved electives in the School of Journalism and Mass Communications (JMC), including courses in journalism, advertising, public relations or mass communications.

University Electives (3 units)

Total Units Required (120 units)

Radio-Television-Film, BA

The Radio-Television-Film program, offered by the Department of Film and Theatre, is designed for students interested in working in and studying the world of media. Once students complete the required, well-rounded base of audio/film/video/writing/scholarship courses, students can then choose to focus more specifically with the program's degree completion options.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	9
Major Requirements	51
University Electives	16
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (9 units)

- RTVF 10 - The Art of Film 3 *unit(s)* (C1)
- RTVF 110 - Media and Culture 3 *unit(s)* (S)
- TA 100W - Writing Workshop: Theatre Arts 3 *unit(s)* (WID)

Major Requirements (51 units)

Core Courses (33 units)

- RTVF 20 - Introduction to Audio for Film & Television 3 *unit(s)*
- RTVF 30 - Introduction to Film & Television Production 3 *unit(s)*
- RTVF 31 - Film and Television Aesthetics 3 *unit(s)*
- RTVF 80 - Introduction to Media 3 *unit(s)*
- RTVF 82 - Introduction to Film History 3 *unit(s)*
- RTVF 120 - Intermediate Audio for Film & Television 3 *unit(s)*
- RTVF 130 - Intermediate Film & Television Production 3 *unit(s)*
- RTVF 160 - Introduction to Screenwriting 3 *unit(s)* (Repeatable for credit up to 6 units)
- RTVF 183 - Critical Studies & Research in RTVF 3 *unit(s)*
- RTVF 185 - Special Topics in RTVF 3 *unit(s)* (Repeatable for credit up to 6 units)
- RTVF 198 - RTVF Internships, Portfolio, Career Prep 3 *unit(s)* (Repeatable for credit up to 6 units)

Major Electives (18 units)

Complete 18 units from:

- RTVF 21 - KSJS On-Air Operations 3 *unit(s)*
- RTVF 22 - KSJS Radio Programming & Production 3 *unit(s)*
- RTVF 23 - Podcasting For Radio and Digital Media 3 *unit(s)*
- RTVF 111 - Global Screen Cultures 3 *unit(s)* (V) (Repeatable for credit up to 6 units)
- RTVF 121 - KSJS-FM Radio Activity 1-3 *unit(s)* (Repeatable for credit up to 6 units)
- RTVF 122 - KSJS Station Operation & Mgmt 3 *unit(s)* (Repeatable for credit up to 6 units)
- RTVF 126 - Advanced Audio Mixing 3 *unit(s)*
- RTVF 131A - Post Production: Color Correction 3 *unit(s)*
- RTVF 131B - Post Production Editing & Delivery 3 *unit(s)*
- RTVF 132A - Introduction to Cinematography 3 *unit(s)*
- RTVF 132B - Advanced Cinematography 3 *unit(s)*
- RTVF 133 - Film and Television Production Management 3 *unit(s)*

- RTVF 135 - RTVF Production: Special Projects 3 unit(s) (*Repeatable for credit up to 6 units*)
- RTVF 136 - Advanced Film & Television Production 3 unit(s)
- RTVF 161 - Advanced Screenwriting 3 unit(s)
- RTVF 163 - Creating and Writing the Television Series 3 unit(s) (*Repeatable for credit up to 6 units*)
- RTVF 180S - Individual Studies 1-3 unit(s)
- RTVF 181 - Modern Film History 3 unit(s)

University Electives (16 units)

Total Units Required (120 units)

Spanish, BA

The following course work satisfies San José State University's requirements for a BA in Spanish, offered by the Department of World Languages and Literatures. A minimum grade point average (GPA) criteria may be required for verification of subject matter competency.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	20
Major Requirements	42
University Electives	17
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)

- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (20 units)

(or SPAN 25A/SPAN 25B equivalent)

- SPAN 25A - Intermediate Spanish 4 *unit(s)* (C2)
 - SPAN 25B - Intermediate Spanish 4 *unit(s)* (C2)
- OR**
- SPAN 20A - Spanish for Heritage Speakers I 4 *unit(s)* (C2)
 - SPAN 20B - Spanish for Heritage Speakers II 4 *unit(s)* (C2)

Foreign Language Requirement

- 12 units of a second language (or equivalent) 12 *unit(s)*

Major Requirements (42 units)

Core Courses (42 units)

- FORL 100W - Writing Workshop 3 *unit(s)* (WID)
- SPAN 101A - Advanced Spanish 4 *unit(s)*
- SPAN 101B - Advanced Spanish 4 *unit(s)*
- SPAN 102A - Spanish Culture 4 *unit(s)*
- SPAN 102B - Hispanic American Culture 3 *unit(s)* (V)
- SPAN 105 - Spanish Phonology 4 *unit(s)*
- SPAN 110 - Spanish Morphology and Syntax 4 *unit(s)*
- SPAN 115 - Introduction to Literary Studies in Spanish 4 *unit(s)*

Complete two courses (8 units):

- SPAN 120A - Spanish Literature I 4 *unit(s)*
- SPAN 120B - Spanish Literature II 4 *unit(s)*
- SPAN 140A - Spanish American Literature 4 *unit(s)*
- SPAN 140B - Spanish American Literature II 4 *unit(s)*

- SPAN 160C - Hispanic Literature 4 *unit(s)*

Complete one course (4 units):

- SPAN 111 - Advanced Spanish Conversation 4 *unit(s)*
- SPAN 160A - Hispanic Culture 4 *unit(s)*
- SPAN 160B - Hispanic Linguistics 4 *unit(s)*
- SPAN 170 - Spanish Translation: Theory and Practice 4 *unit(s)*
- SPAN 132 - Special Topics in Spanish for Careers 4 *unit(s)*

University Electives (17 units)

Electives must be selected with advisor approval.

Total Units Required (120 units)

Theatre Arts, BA

The Theatre Major, offered by the Department of Film and Theatre, emphasizes a strong foundation in acting, directing, writing, design and entertainment technologies. Theatre Arts students study the history and practices of theatre with a particular emphasis on the interrelationship between theatre and contemporary performance culture. Once students complete the required, well-rounded base of core courses, students can then choose to focus more specifically with the program's elective specialization areas.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	9
Major Requirements	51
University Electives	25
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (9 units)

- TA 5 - Acting 3 *unit(s)* (C1)
- TA 100W - Writing Workshop: Theatre Arts 3 *unit(s)* (WID)
- TA 127 - Contemporary Theatre 3 *unit(s)* (V)

Major Requirements (51 units)

Core Courses (39 units)

- TA 11 - Script Analysis 3 *unit(s)*
- TA 17 - Intermediate Acting 3 *unit(s)*
- TA 51A - Scenery and Props for the Performing Arts 1 *unit(s)*
- TA 51B - Costume for the Performing Arts 1 *unit(s)*
- TA 51C - Lighting & Sound for the Performing Arts 1 *unit(s)*
- TA 55 - Intro to Design for Theatre 3 *unit(s)* (C1)
- TA 116 - Directing 3 *unit(s)*
- TA 120 - Theatre History 3 *unit(s)* **OR** TA 121 - Topics in Performance History 3 *unit(s)*
- TA 128 - Introduction to Playwriting 3 *unit(s)*
- TA 153 - Costume Design for Performing Arts 3 *unit(s)* **OR** TA 154 - Scenic Design for Performing Arts 3 *unit(s)*
- OR** TA 151 - Lighting Design for Performing Arts 3 *unit(s)*
- TA 170A - Introduction to Acting and Directing for the Camera 3 *unit(s)*
- TA 198 - Internship 3 *unit(s)*

Complete a combination of 9 units:

Complete a combination of 9 units from (at least 3 unit must be TA 191):

- TA 117 - Practice in Acting or Directing 1-3 unit(s) (3 units required)
- TA 191 - Theatre Production Workshop 3 unit(s) (3 units required)

Major Electives (12 units)

- TA 10 - Theatre Appreciation 3 unit(s) (C1)
- TA 13 - Great Comedies for Theatre 3 unit(s) (C2)
- TA 48 - Voice & Movement for the Actor 3 unit(s) (E)
- TA 64 - Make-up for Performing Arts 3 unit(s)
- TA 91 - Scenic Painting & Props 1-3 unit(s) (3 units required)
- TA 103 - Musical Theatre 3 unit(s) (Repeatable for credit up to 6 units)
- TA 110 - Advanced Acting 3 unit(s)
- TA 112 - Rehearsal and Performance 3 unit(s)
(Repeatable for credit)
- TA 113 - Acting and Professional Career Prep 3 unit(s)
- TA 117 - Practice in Acting or Directing 1-3 unit(s) (Repeatable for credit)
- TA 121 - Topics in Performance History 3 unit(s)
- TA 129 - Advanced Playwriting 3 unit(s)
- TA 131 - Storytelling 3 unit(s)
- TA 148 - Voice & Movement for Performance 3 unit(s)
- TA 151 - Lighting Design for Performing Arts 3 unit(s)
- TA 153 - Costume Design for Performing Arts 3 unit(s)
- TA 154 - Scenic Design for Performing Arts 3 unit(s)
- TA 158 - Model Making & Drafting Film & Theatre 3 unit(s)
- TA 161 - Theatre Design Topics 3 unit(s)
- TA 167 - Theatre in Education 3 unit(s)
- TA 168 - Stage Management 3 unit(s)
- TA 170A - Introduction to Acting and Directing for the Camera 3 unit(s)
- TA 170B - Advanced Acting and Directing for the Camera 3 unit(s)
- TA 180 - Individual Studies 1-3 unit(s)
- TA 191 - Theatre Production Workshop 3 unit(s) (Repeatable for credit)
- TA 199H - Honors Program 2-3 unit(s)

University Electives (25 units)

Total Units Required (120 units)

Theatre Arts, Preparation for Teaching, BA (Not accepting students)

This major is designed for students interested in teaching English or theatre arts in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Theatre Arts. A minimum grade point average (GPA) criteria may be required for verification of subject matter competency. Completion of the program will not guarantee admission to the credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See "Teaching: How to Become a Teacher in California" (see Teaching) for information on application and admission to credential programs.

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	27
Major Requirements	39
University Electives	13
Total	120

University Requirements for Graduation

Students must complete all residency, curriculum, unit, and GPA requirements as outlined in the Undergraduate University Graduation Requirements section of the Policies and Procedures.

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

General Education/American Institution Requirements

Courses that meet General Education/American Institution requirements are noted with area designation for required area. For legend please see General Education Attributes.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3 or B4 must be passed with a "C-" or better to meet the requirement. Consult with major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

Graduation Writing Assessment Requirement

At SJSU, students must pass both the SJSU Writing Skills Test (WST) and a 100W course. Exceptions to the GVAR may be found at Graduation Writing Assessment Requirement (GVAR).

A grade of C or better (C- not accepted) is required to meet graduation requirement.

Major Preparation (27 units)

- ENGL 101 - Introduction to Literary Criticism 4 *unit(s)*
- ENGL 103 - Modern English 4 *unit(s)*
- ENGL 109 - Writing and the Young Writer 4 *unit(s)*

- ENGL 112B - Literature for Young Adults 4 *unit(s)*
- ENGL 145 - Shakespeare and Performance 4 *unit(s)*
- TA 100W - Writing Workshop: Theatre Arts 3 *unit(s)* (GWAR)

Complete One Course From:

- ENGL 117A - American Literature, Film, & Culture 3 *unit(s)* (S)
- ENGL 117B - Global Film, Literature, and Cultures 3 *unit(s)* (V)
- RTVF 181 - Modern Film History 3 *unit(s)*

Complete One Course From:

- ENGL 122 - Topics in Comparative World Literature 4 *unit(s)*
- TA 127 - Contemporary Theatre 3 *unit(s)* (V)

Complete One Course From:

- ENGL 125 - Ancient Literatures 4 *unit(s)*
- TA 120 - Theatre History 3 *unit(s)*

Major Requirements (39 units)

- TA 5 - Acting 3 *unit(s)* (C1)
- TA 11 - Script Analysis 3 *unit(s)*
- TA 48 - Voice & Movement for the Actor 3 *unit(s)* (E)
- TA 51A - Scenery and Props for the Performing Arts 1 *unit(s)*
- TA 51B - Costume for the Performing Arts 1 *unit(s)*
- TA 51C - Lighting & Sound for the Performing Arts 1 *unit(s)*
- TA 64 - Make-up for Performing Arts 3 *unit(s)*
- TA 116 - Directing 3 *unit(s)*
- TA 128 - Introduction to Playwriting 3 *unit(s)*
- TA 151 - Lighting Design for Performing Arts 3 *unit(s)*
- TA 167 - Theatre in Education 3 *unit(s)*
- TA 198 - Internship 3 *unit(s)*

Complete One Course From:

- TA 153 - Costume Design for Performing Arts 3 *unit(s)*
- TA 154 - Scenic Design for Performing Arts 3 *unit(s)*

Complete Two Courses From:

- TA 17 - Intermediate Acting 3 *unit(s)*
- TA 117 - Practice in Acting or Directing 1-3 *unit(s)* (3 *units* required)
- TA 168 - Stage Management 3 *unit(s)*
- TA 170A - Introduction to Acting and Directing for the Camera 3 *unit(s)*
- TA 191 - Theatre Production Workshop 3 *unit(s)* (3 *units* required)

University Electives (13 units)

Total Units Required (120 units)

Undergraduate Minor(s)

Advertising Minor

The Minor in Advertising is offered by the School of Journalism and Mass Communications.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- ADV 91 - Introduction to Advertising 3 *unit(s)*
- ADV 128 - Integrated Marketing Communications (IMC) 3 *unit(s)*
- ADV 129 - Advertising Campaign Planning and Management 3 *unit(s)*

Minor Electives (9 units)

Complete three courses.

- ADV 93 - Design Fundamentals for Advertising 1 3 *unit(s)*
- ADV 94 - Design Fundamentals for Advertising 2 3 *unit(s)*
- ADV 95 - Working With Type 3 *unit(s)*
- ADV 116 - Spartan Daily Advertising Staff 3 *unit(s)*
- ADV 121 - Strategic Planning/Communications 3 *unit(s)*
- ADV 122 - Business-to-Business Advertising 3 *unit(s)*
- ADV 123 - Introduction to Branded Content 3 *unit(s)*
- ADV 124 - Copywriting 3 *unit(s)*
- ADV 125 - Advertising Layout and Production 3 *unit(s)*
- ADV 126 - Media Planning and Buying 3 *unit(s)*
- ADV 130 - Advertising Portfolio 1 3 *unit(s)*
- ADV 131 - Advertising Portfolio 2 3 *unit(s)*
- ADV 132 - UX UI Design for Advertising 3 *unit(s)*

Total Units Required (18 units)

American Studies Minor

The interdisciplinary American Studies minor, offered by the Department of Humanities, provides students the opportunity to study American cultures and societies. In addition to the focus on a better understanding of American cultures, there is an emphasis upon analytic skills, close reasoning, and effective communication, providing useful preparation for graduate study, for elementary or secondary teaching, or for careers in law, public service, or government.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements

Some lower division General Education and SJSU Studies requirements may be completed with the American Studies Minor.

Plan A (18 units)

- AMS 10 - Stories that Make America 3 *unit(s)* (C2 + US1)
- AMS 11 - Visions of Democracy 3 *unit(s)* (D + US2)
- AMS 12 - Intro to US Popular Culture: Serious Fun! 3 *unit(s)* (C1)

Electives (9 units)

- AMS 129 - The U.S. in a Global Context 3 *unit(s)*
- AMS 139 - Animals and Society 3 *unit(s)* (R)
- AMS 159 - Nature and World Cultures 3 *unit(s)* (S)
- AMS 160 - Special Topics in Humanities 3 *unit(s)*
- AMS 169 - The American Dream 3 *unit(s)* (V)
- AMS 179 - Issues in US Popular Culture 3 *unit(s)*
- AMS 190 - Senior Seminar in Humanities 3 *unit(s)*
- CA 95 - Introduction to Queer Arts 3 *unit(s)* (C1)
- CA 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- HUM 95 - Introduction to Digital Humanities 3 *unit(s)*
- RELS 162 - Religion and Political Controversy in the US 3 *unit(s)* (S)
- RELS 191 - Religion in America 3 *unit(s)*

Plan B (18 units)

Choose six of the following American Studies courses:

- AMS 10 - Stories that Make America 3 *unit(s)* (C2 + US1))
- AMS 11 - Visions of Democracy 3 *unit(s)* (D + US2))
- AMS 129 - The U.S. in a Global Context 3 *unit(s)*
- AMS 139 - Animals and Society 3 *unit(s)* (R)
- AMS 159 - Nature and World Cultures 3 *unit(s)* (S)

- AMS 160 - Special Topics in Humanities 3 *unit(s)*
- AMS 169 - The American Dream 3 *unit(s)* (V)
- AMS 179 - Issues in US Popular Culture 3 *unit(s)*
- AMS 190 - Senior Seminar in Humanities 3 *unit(s)*
- CA 95 - Introduction to Queer Arts 3 *unit(s)* (C1)
- CA 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- HUM 95 - Introduction to Digital Humanities 3 *unit(s)*
- RELS 162 - Religion and Political Controversy in the US 3 *unit(s)* (S)
- RELS 191 - Religion in America 3 *unit(s)*

Total Units Required (18 units)

Architectural Studies Minor

The Minor in Architectural Studies, offered by the Department of Art and Art History, provides essential preparation for students who plan to apply for graduate study in Architecture.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (9 units)

Complete One Course From:

- MATH 19 - Precalculus 5 *unit(s)* (B4)
- MATH 30 - Calculus I 3 *unit(s)* (B4)

Complete One Course From:

- PHYS 1 - Elementary Physics 3 *unit(s)* (B1)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Complete One Course From:

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)

Minor Requirements (12 units)

Art History Requirement (6 units)

Complete two courses from:

- ARTH 160 - Modern Architecture 3 *unit(s)*
- ARTH 161 - Contemporary Architecture 3 *unit(s)*
- ARTH 162 - California Architecture 3 *unit(s)*
- ARTH 163 - Twentieth Century Urban Design 3 *unit(s)*
- ARTH 192C - History of Interior Design 3 *unit(s)*

Interior Design Requirements (3 units)

Complete one course from:

- DSIT 5 - Introduction of Interior Design and Architecture 3 *unit(s)*
- DSIT 10 - Sketching, Drawing + Modeling 3 *unit(s)*
- DSIT 29 - Design Process 3 *unit(s)*
- DSIT 34 - Interior Architecture Foundation Studio 3 *unit(s)*
- DSIT 103 - Interior Architecture Conceptual Design Studio 3 *unit(s)*

Art Requirements (3 units)

3 units must include a second studio course, either from the Interior Design requirement or from the following.

- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 26 - Drawing II 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*
- ART 172 - Intermediate Sculpture: System/Structure 3 *unit(s)*
- ART 173 - Topics in Installation Art 3 *unit(s)*

Total Units Required (21 units)

Art Education Minor

The Minor in Art Education, offered by the Department of Art and Art History, helps to prepare students who plan to apply to credential programs in Art without first completing the BA Art/Studio Practice, Concentration in Teacher Preparation.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (24 units)

Core Requirements (21 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 46 - Introduction to Ceramics 3 *unit(s)*

- ART 138 - Elementary Art Methods 3 *unit(s)*
- ART 139 - Teaching Diversity through Art 3 *unit(s)*
- ARED 150 - Field Experience in the Arts 3 *unit(s)*

Complete One Course From:

- PHIL 66 - Introduction to Aesthetics 3 *unit(s)* (C1)
- PHIL 106 - Philosophy of Art 3 *unit(s)*

Upper Division Art History (3 units)

Complete one course from:

- ARTH 182A - Art of the Americas 3 *unit(s)*
- ARTH 183A - Art of Egypt and Mesopotamia 3 *unit(s)*
- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)
- ARTH 194A - Art of China 3 *unit(s)*
- ARTH 195 - Art of Japan 3 *unit(s)*

Total Units Required (24 units)

Art History and Visual Culture Minor

The Minor in Art History and Visual Culture, offered by the Department of Art and Art History, enriches the lives of its students by providing an in-depth knowledge of cultural traditions and creative accomplishment, and by providing the skills necessary for applying that knowledge in the service of our multicultural society.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (6 units)

Complete 6 units from:

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)

Minor Requirements (12 units)

Twelve units of art history course work total. Must include 9 units of upper division art history courses. Of these, six units must be completed at San José State University.

Total Units Required (18 units)

Asian Studies Minor

The Asian Studies Minor, offered by the Department of World Languages and Literatures, acquaints students with the histories, traditional cultures and contemporary conditions of Asian countries and societies. Courses may be selected from anthropology, art, business, foreign languages, geography, history, music philosophy, political science, and religious studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements

Minor course work must include at least 12 units that are distinct and separate from the course work in one's major or other minor.

Core Courses (6-9 units)

- CHIN 1A - Elementary Chinese 4 *unit(s)* (C2)
- CHIN 1B - Elementary Chinese 4 *unit(s)* (C2)
- CHIN 25A - Intermediate Chinese 4 *unit(s)* (C2)
- CHIN 25B - Intermediate Chinese 4 *unit(s)* (C2)
- CHIN 102 - Chinese Culture 4 *unit(s)*
- CHIN 110 - Structure of the Chinese Language 4 *unit(s)*
- CHIN 101A - Advanced Chinese 4 *unit(s)*
- CHIN 101B - Advanced Chinese 4 *unit(s)*
- CHIN 130 - Readings in Chinese Culture 4 *unit(s)*
- CHIN 132 - Special Topics in Chinese for Careers 4 *unit(s)*
- CHIN 140 - Chinese Culture and Politics Through Literature 3 *unit(s)* (V)
- JPN 1A - Elementary Japanese 4 *unit(s)* (C2)
- JPN 1B - Elementary Japanese 4 *unit(s)* (C2)
- JPN 25A - Intermediate Japanese 4 *unit(s)* (C2)
- JPN 25B - Intermediate Japanese 4 *unit(s)* (C2)
- JPN 101A - Advanced Japanese **OR** JPN 101C - Advanced Conversational Japanese 4 *unit(s)*
- JPN 102B - Local and Minority Cultures in Japan 3 *unit(s)* (V)
- TAG 1A - Elementary Tagalog I 4 *unit(s)* (C2)
- TAG 1B - Elementary Tagalog II 4 *unit(s)* (C2)
- TAG 25A - Intermediate Tagalog I 4 *unit(s)*
- TAG 25B - Intermediate Tagalog II 4 *unit(s)*
- VIET 1A - Elementary Vietnamese 4 *unit(s)* (C2)
- VIET 1B - Elementary Vietnamese 4 *unit(s)* (C2)
- RELS 144 - Chinese Traditions 3 *unit(s)*

Electives (3-6 units)

- ANTH 177 - Anthropology of Asia 3 *unit(s)*

- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)
- ARTH 194A - Art of China 3 *unit(s)*
- ARTH 195 - Art of Japan 3 *unit(s)*
- BUS2 133B - Relationship Marketing: Pacific Rim 3 *unit(s)*
- GEOG 160 - East and South Asia 3 *unit(s)*
- HIST 109A - History of China 4 *unit(s)*
- HIST 109B - History of China 4 *unit(s)*
- HIST 110A - History of Japan 4 *unit(s)*
- HIST 110B - History of Japan 4 *unit(s)*
- HUM 114 - Legacy of Asia 3 *unit(s)* (V)
- LING 122 - English as a World Language 3 *unit(s)* (V)
- PHIL 104 - Asian Philosophy 3 *unit(s)* (V)
- POLS 145 - Asian Politics 4 *unit(s)*
- RELS 142 - Contemporary Buddhism and its Roots 3 *unit(s)*

Total Units Required (12 units)

Ceramic Art Minor

The Minor in Ceramic Art, offered by the Department of Art and Art History, provides students with a range of techniques and skills for the production of ceramic art. Students will be exposed to and research historical and contemporary models of ceramic art. Students will also explore advanced sculptural methods for realizing ceramic art, including hand-built, wheel-thrown, and 3D printed forms.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (6 units)

- ART 46 - Introduction to Ceramics 3 *unit(s)*

Complete one course from the following:

- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*

Minor Requirements (12 units)

Complete 12 units from the following repeatable courses:

- ART 132 - Topics in Intermediate Ceramics 3 *unit(s)* *
- ART 133 - Topics in Ceramic Sculpture 3 *unit(s)* *
- ART 134 - Topics in Advanced Ceramics 3 *unit(s)* *

- ART 137 - Figure Modeling 3 *unit(s)*

**Courses repeatable for credit when topics change, up to 9 units.*

Total Units Required (18 units)

Chinese Minor

The Chinese minor offers a firm grounding in the language and culture of the Chinese-speaking world. The minor is open to students from any major.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Proficiency

- CHIN 1A - Elementary Chinese 4 *unit(s)* (C2)
- CHIN 1B - Elementary Chinese 4 *unit(s)* (C2)

Minor Requirements (19-20 units)

- CHIN 25A - Intermediate Chinese 4 *unit(s)* (C2)
- CHIN 25B - Intermediate Chinese 4 *unit(s)* (C2)
- CHIN 101A - Advanced Chinese 4 *unit(s)*
- CHIN 101B - Advanced Chinese 4 *unit(s)*

Complete One Course From:

- CHIN 102 - Chinese Culture 4 *unit(s)*
- CHIN 140 - Chinese Culture and Politics Through Literature 3 *unit(s)* (V)
- RELS 144 - Chinese Traditions 3 *unit(s)*

Total Units Required (19-20 units)

Comparative Literature Minor

The Minor in Comparative Literature is offered by the Department of English and Comparative Literature.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the

coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (17-20 units)

Literature (6-8 units)

Choose two courses from:

- ENGL 40 - Contemporary World Fiction 3 *unit(s)* (C2)
- ENGL 117B - Global Film, Literature, and Cultures 3 *unit(s)* (V)
- ENGL 123A - Literatures of the Americas 3 *unit(s)* (V)
- ENGL 123B - Literatures of Africa 3 *unit(s)* (V)
- ENGL 123C - Literatures of the Pacific 3 *unit(s)* (V)
- ENGL 123D - Literatures of Asia 3 *unit(s)* (V)
- COLT 122 - Topics in Comparative World Literature 4 *unit(s)*

Additional Courses (11-12 units)

- Select 11-12 units of Upper Division Instructor Consent and Advisor Approved World Language Literature courses (ENGL 120 or above) or Advisor Approved Upper-Division literature-in-translation courses with extensive reading in the original language 11-12 *unit(s)*

Total Units Required (17-20 units)

Creative Arts Minor

The interdisciplinary Minor in Creative Arts, offered by the Department of Humanities, provides students the opportunity to pursue a flexible, interdisciplinary curriculum that examines creativity across the arts domains and emphasizes both creative and critical thinking. . This minor is recommended to students who are majoring in another arts area who would like to learn more about interdisciplinary work and for students who would like to integrate knowledge of creativity and the arts into their proposed career path.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- CA 60 - Creativity Matters 3 *unit(s)* (E)
- Three units of course work in arts disciplines from any of the following departments/schools (three units in each): School of Art and Design, School of Music, RTVF Department, English and Comparative Literature Department, World Languages and Literatures Department (literature only) 3 *unit(s)*
- Three units of studio/activity courses in visual or performing arts or creative writing 3 *unit(s)*

Upper Division Requirements (9 units)

Complete One Course From:

- CA 175 - Seminar in Creative Process 3 *unit(s)*
- CA 176 - Creativity and Creative Leadership 3 *unit(s)*

Complete One Course From:

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)* (CA 177 for Prospective Teachers)
- CA 194 - Community Building through Arts Orgs 3 *unit(s)*
- HUM 160 - Special Topics in Humanities 3 *unit(s)*

Complete One Course From:

- CA 172 - The Arts in U.S. Society 3 *unit(s)* (S)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)* (V)

Total Units Required (18 units)

Creative Writing Minor

The Minor in Creative Writing is offered by the Department of English and Comparative Literature.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18-19 units)

Lower Division (3 units)

- ENGL 71 - Creative Writing 3 *unit(s)* (C2)

Upper Division (12 units)

Complete 12 units from:

- ENGL 130 - Writing Fiction 4 *unit(s)*
- ENGL 131 - Writing Poetry 4 *unit(s)*
- ENGL 133 - Reed Magazine 4 *unit(s)*
- ENGL 135 - Writing Nonfiction 4 *unit(s)*

Literature Courses (3-4 units)

Select either one survey course

- ENGL 50 - Beginnings to the American Experiment 3 *unit(s)*
- ENGL 60 - Literatures of the Atlantic World, 1680-1860 4 *unit(s)*
- ENGL 70 - Emerging Modernisms and Beyond 3 *unit(s)*
- ENGL 151 - 20th and 21st Century Poetry 4 *unit(s)*
- ENGL 160 - Topics in American Literature 4 *unit(s)*
- ENGL 162 - Indigenous American Literatures 4 *unit(s)*
- ENGL 163 - Asian American Literatures 4 *unit(s)*
- ENGL 165 - Black American Literatures 4 *unit(s)*
- ENGL 166 - Latinx Literatures 4 *unit(s)*
- ENGL 167 - Steinbeck 4 *unit(s)*
- ENGL 168 - The American Novel 4 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)*
- ENGL 171 - Pop Cultures 4 *unit(s)*
- ENGL 176 - The Short Story 4 *unit(s)*
- ENGL 177 - Topics in Fiction Since 1900 4 *unit(s)*

Total Units Required (18-19 units)

Dance Minor

The Dance Minor is designed to expose students to a range of movement genres, the basics of stagecraft, and a glimpse into dance's socio-cultural significance. Frequently chosen in tandem with a major in Theatre Arts, and valuable to other degree programs like Film, Performance Studies, and Kinesiology, the Dance Minor provides students a creative outlet that refines body and mind and can deepen understanding of bodies moving through time and space.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (20 units)

Core (3 units)

Complete one course from:

- ARTH 15 - Intro to Visual Culture 3 *unit(s)* (C1)
- DANC 10 - Dance Appreciation 3 *unit(s)* (C1)
- MUSC 10A - Music Appreciation 3 *unit(s)* (C1)

Technique Paths (9 units)

Complete nine units of any combination of Level I, II, III, IV courses in Ballet, Jazz or Modern.

Electives (8 units)

Complete eight units from:

- DANC 40A - Topics in Modern Dance I 2 *unit(s)* (PE)
- DANC 41A - Topics in Ballet I 2 *unit(s)* (PE)
- DANC 42A - Topics in Jazz Dance I 2 *unit(s)* (PE)
- DANC 43 - Dance Improvisation 1 *unit(s)*
- DANC 49A - Topics in Tap Dance I 1 *unit(s)*
- DANC 51A - Dance Production 3 *unit(s)*
- DANC 51B - Topics in Dance Crewing 0.5 *unit(s)* (*Students will enroll in DANC 51B twice*)
- DANC 53 - World Dance 1 *unit(s)*
- DANC 75 - Rhythm and Dynamics in Dance 1 *unit(s)*
- DANC 102 - Dance in World Cultures 3 *unit(s)* (V)
- DANC 112 - ENS: Dance Rehearsal and Performance 2 *unit(s)*
- DANC 145A - Choreography I 3 *unit(s)*
- DANC 145B - Choreography II 3 *unit(s)*
- DANC 145C - Choreography III 3 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- DANC 150A - Kinesiology I 3 *unit(s)*
- DANC 150B - Kinesiology II 3 *unit(s)*
- DANC 194 - Dance Repertory Activity 1 *unit(s)*

Total Units Required (20 units)

Digital Media Art Minor

The Minor in Digital Media Art, offered by the Department of Art and Art History, allows students to learn specialized skills in interactive digital media and 3D digital fabrication for application in a variety of creative projects. Digital Media Art courses emphasize concept-development and creative innovation, building on technical skills in web coding, virtual reality, digital fabrication, and interactive installations. Students graduating with a Minor in Digital Media Art will be conversant in the historical, theoretical, and technological aspects of digital media across an array of platforms. For Art majors in other media (eg. Pictorial Art or Spatial Art), the Minor in Digital Media Art facilitates the acquisition of an interdisciplinary art practice incorporating digital technologies. For non-Art majors, it develops both technical and conceptual skills in computer and web-based creative work. The Minor in Digital Media Art allows students to learn the following media and technologies: creative web development; computer-based gaming; digital fabrication of 3-D objects; interactive installations using a variety of digital and screen/projection technologies; software coding for artistic purposes; and motion capture.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (6 units)

- ART 74 - Introduction to Digital Media 3 *unit(s)*
- ART 75 - Introduction to Digital Video Art 3 *unit(s)*

Minor Requirements (12 units)

- ART 101 - Digital Media Art 3 *unit(s)*
- ART 105 - Advanced Digital Video 3 *unit(s)*

Specialized Topics in Digital Media Art (6 units)

Complete two courses from. The courses below allow students to explore a range of specialized topics in Digital Media Art.

- ART 102 - 3D Modeling and Printing 3 *unit(s)*
- ART 103 - Art as System 3 *unit(s)*
- ART 106 - Topics in Human Machine Interface 3 *unit(s)*
- ART 107 - Advanced Projects in Digital Media Art 3 *unit(s)*
- ART 108 - Introduction to Game Studies 3 *unit(s)*
- ART 109 - Web Development in HTML, CSS and JavaScript 3 *unit(s)*
- ART 193 - Digital Materials 3 *unit(s)*

Total Units Required (18 units)

Digital Media for Mass Communications Minor

The Digital Media for Mass Communications Minor, offered by the School of Journalism and Mass Communications, is the ideal complement to any major, helping students effectively learn and apply the necessary mass media skills to communicate their ideas to a mass audience. This minor will help students from all disciplines to achieve technical media competency in today's workplace, no matter their field of study.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

- MCOM 63 - New Media 3 *unit(s)*
- MCOM 107 - Audio Podcasting, Aesthetics and Invention 3 *unit(s)*
- MCOM 108 - Virtual Worlds, Virtual Reality and Mass Media 3 *unit(s)*
- MCOM 163 - Advanced New Media Technologies 3 *unit(s)*
- MCOM 175 - Social Media and Web Analytics 3 *unit(s)*

Total Units Required (15 units)

French Minor

The French minor offers a firm grounding in the language and culture of the French-speaking world. The minor is open to students from any major.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Proficiency

- FREN 1A - Elementary French 4 *unit(s)* (C2)
- FREN 1B - Elementary French 4 *unit(s)* (C2)

Minor Requirements (19-20 units)

- FREN 25A - Intermediate French: Reading 4 *unit(s)* (C2)
- FREN 25B - Intermediate French: Writing 4 *unit(s)* (C2)

Complete Two Courses From:

- FREN 101A - Advanced French: Reading and Writing 4 *unit(s)*
- FREN 101B - Advanced French: Written Communication 4 *unit(s)*
- FREN 101C - Advanced French: Oral Communication 4 *unit(s)*

Complete One Course From:

- FREN 102B - Francophone Cultures: Through Literature and Cinema 3 *unit(s)* (V)
- FREN 132 - Special Topics in French for Careers 4 *unit(s)*

Total Units Required (19-20 units)

German Minor

The German minor offers a firm grounding in the language and culture of the German-speaking world. The minor is open to students from any major.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Proficiency

- GERM 1A - Elementary German 4 *unit(s)* (C2)
- GERM 1B - Elementary German 4 *unit(s)* (C2)

Minor Requirements (19 units)

- GERM 25A - Intermediate German 4 *unit(s)* (C2)
- GERM 25B - Intermediate German 4 *unit(s)* (C2)

Electives (11 units)

Select 11 units of appropriate coursework, including study abroad, with approval from an advisor

Total Units Required (19 units)

Graphic Design Minor

The Minor in Graphic Design is offered by the Department of Design.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (6 units)

Complete One Course From:

- ANI 11 - Illustration Fundamentals I 3 *unit(s)*
(ART 24 will also be accepted for transfer students)
- DSID 21 - Visualization I 3 *unit(s)*
- DSIT 10 - Sketching, Drawing + Modeling 3 *unit(s)*

Complete One Course From:

Highly Recommend Students take ARTH 70B

- ARTH 70A - Art History, Prehistoric to Medieval 3 *unit(s)* (C1)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)

Minor Requirements (15 units)

- DSGD 63 - Fundamental Graphic Visualization 3 *unit(s)*
(ART 12 will also be accepted for transfer students.)

- DSGD 83 - Digital Applications: Basics 3 *unit(s)*
- DSGD 99 - Introduction to Typography 3 *unit(s)*
- DSGD 100 - Visual Communication & Process 3 *unit(s)*
- DSGD 104 - Introduction to Graphic Design 3 *unit(s)*

Total Units Required (21 units)

Humanities Minor

The minor in Humanities is an interdisciplinary and globally focused course of study that integrates ways of knowing, literature, art, culture, ecology, and social institutions for students from majors across the University. The Humanities minor is especially recommended to students seeking a career in international law, business, economic development, justice studies, health care, education, genocide studies, or religious studies. .

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18-21 units)

Choose a Plan

Plan A (21 units)

- HUM 10 - Honors Global Oral and Rhetorical Cultures 3 *unit(s)* (A1)
- HUM 11 - Honors Critical Thinking across Global Cultures 3 *unit(s)* (A3)
- HUM 20 - Honors Global Material Cultures 3 *unit(s)* (C1)
- HUM 21 - Honors Reading Difference across Global Cultures 3 *unit(s)* (C2)
- HUM 190 - Senior Seminar in Humanities 3 *unit(s)*

Complete Two Course From:

- HUM 119 - Myths, Heroes, and Global Cultures 3 *unit(s)*
- HUM 128 - Perspectives on the Twentieth Century: The West in a Global Context 3 *unit(s)* (V)
- HUM 160 - Special Topics in Humanities 3 *unit(s)*
- Any upper division humanities course 3 *unit(s)*

Plan B (18 units)

- HUM 101 - Human Life: Let's Think About It 3 *unit(s)*
- HUM 190 - Senior Seminar in Humanities 3 *unit(s)*
- Twelve units of upper-division Humanities courses, as approved by the advisor 12 *unit(s)*

Total Units Required (18-21 units)

Interaction Design Minor

Minor Coordinator: Dana Ragouzeos (Industrial Design)

Interaction Design deals with the structure and behavior of interactive products and services. Interaction Designers create compelling relationships between people and the interactive systems they use, from computers to mobile devices to appliances; Interaction Designers lay the groundwork for intangible experiences.

The minor, offered by the Department of Design, requires students to complete 21 units of required courses. 12 of these units must be outside the requirements for the student's major, i.e. the same courses cannot be listed on the minor and the major form. It is the student's responsibility to make sure that the prerequisites for each course are met. Students should declare the minor as soon as possible so that they can enroll in courses with waived prerequisites. Students in Majors other than Design Studies, BA, Graphic Design, BFA, or Industrial Design, BS may need to take additional courses to meet prerequisites for the courses required in this minor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (21 units)

- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- DSGD 83 - Digital Applications: Basics 3 *unit(s)*
- DSID 126 - Ergonomics for Design 3 *unit(s)*
- DSID 131 - Interaction Design 3 *unit(s)*
- DSGD 186 - Digital Applications: Methodology 3 *unit(s)*
- PSYC 173 - Human Factors 3 *unit(s)*

Minor Elective (3 units)

Electives offer a breadth of classes ranging from advanced topics in visual design to coding to relevant cultural concerns. These courses all relate to interaction design in a variety of ways. The offering is intended to provide a small amount of specialization within the minor as driven by the student's career goals.

Note: Some courses have pre/co-requisites that fall outside of the minor. Course availability may vary from semester to semester. Check with your Minor advisor for more information.

- ART 106 - Topics in Human Machine Interface 3 *unit(s)*
- ART 109 - Web Development in HTML, CSS and JavaScript 3 *unit(s)*
- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- CMPE 30 - Programming Concepts and Methodology 3 *unit(s)*
- CS 22A - Python for Everyone 3 *unit(s)* (B4)
- CS 46A - Introduction to Programming 4 *unit(s)*
- DSGD 99 - Introduction to Typography 3 *unit(s)*
- DSGD 132 - User Interface & Interaction Design 3 *unit(s)*
- ENGR 25 - The Digital World and Society 3 *unit(s)*
- ISE 164 - Computer and Human Interaction 3 *unit(s)*
- PSYC 117 - Psychological Tests and Measures 3 *unit(s)*

- PSYC 135 - Cognition 3 *unit(s)*
- PSYC 158 - Perception 3 *unit(s)*

Total Units Required (21 units)

Interior Design Minor

The Minor in Interior Design is offered by the Department of Design.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (9 units)

- DSIT 5 - Introduction of Interior Design and Architecture 3 *unit(s)*
- DSIT 10 - Sketching, Drawing + Modeling 3 *unit(s)*
- DSIT 83 - Visual Communication I 3 *unit(s)*

Minor Requirements (15 units)

- DSIT 29 - Design Process 3 *unit(s)*
- DSIT 33 - Architectural Presentation 3 *unit(s)*
- DSIT 34 - Interior Architecture Foundation Studio 3 *unit(s)*

Complete Two Courses From:

- DSIT 106 - Architectural Project Materials 3 *unit(s)*
- DSIT 107 - Furniture Design 3 *unit(s)*
- DSIT 108 - Architectural Lighting Design 3 *unit(s)*
- DSIT 112 - Professional Practice of Interior Archit 3 *unit(s)*

Total Units Required (24 units)

International Business Minor

Students in Business Administration, International Business Concentration, BS have the option to select one of the following world languages: Chinese, French, Japanese, or Spanish for a minor, offered by the Department of World Languages and Literatures. The student's transcript and diploma will reflect a minor in Chinese, French, Japanese, or Spanish only if at least 12 units of coursework are completely distinct and separate from the coursework in the major. Business Administration, International Business Concentration, BS majors who are interested in selecting courses in this minor that are most appropriate for their major should contact the respective World Language Faculty Member to advise them regarding their minor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15-17 units)

Choose a Language

Chinese (15-16 units)

- CHIN 25A - Intermediate Chinese 4 *unit(s)* (C2)
- CHIN 25B - Intermediate Chinese 4 *unit(s)* (C2)

Complete One Course From:

- CHIN 101A - Advanced Chinese 4 *unit(s)*
- CHIN 101B - Advanced Chinese 4 *unit(s)*

Complete One Course From:

- CHIN 102 - Chinese Culture 4 *unit(s)*
- CHIN 140 - Chinese Culture and Politics Through Literature 3 *unit(s)* (V)
- RELS 144 - Chinese Traditions 3 *unit(s)*

French (15-16 units)

- FREN 25A - Intermediate French: Reading 4 *unit(s)* (C2)
- FREN 25B - Intermediate French: Writing 4 *unit(s)* (C2)

Complete One Course From:

- FREN 101A - Advanced French: Reading and Writing 4 *unit(s)*
- FREN 101B - Advanced French: Written Communication 4 *unit(s)*
- FREN 101C - Advanced French: Oral Communication 4 *unit(s)*

Complete One Course From:

- FREN 102B - Francophone Cultures: Through Literature and Cinema 3 *unit(s)* (V)
- FREN 132 - Special Topics in French for Careers 4 *unit(s)*

Japanese (15-16 units)

- JPN 25A - Intermediate Japanese 4 *unit(s)* (C2)

- JPN 25B - Intermediate Japanese 4 *unit(s)* (C2)
- JPN 101C - Advanced Conversational Japanese 4 *unit(s)*

Complete One Course From:

- JPN 102A - Japanese Culture 4 *unit(s)*
- JPN 107 - Japanese for Business Professionals 4 *unit(s)*

Spanish (15-16 units)

Non-Heritage Speakers:

- SPAN 25A - Intermediate Spanish 4 *unit(s)* (C2)
- SPAN 25B - Intermediate Spanish 4 *unit(s)* (C2)

Heritage Speakers:

- SPAN 20A - Spanish for Heritage Speakers I 4 *unit(s)*
- SPAN 20B - Spanish for Heritage Speakers II 4 *unit(s)*

Complete One Course From:

- SPAN 101A - Advanced Spanish 4 *unit(s)*
- SPAN 101B - Advanced Spanish 4 *unit(s)*
- SPAN 111 - Advanced Spanish Conversation 4 *unit(s)*

Complete One Course From:

- SPAN 102A - Spanish Culture 4 *unit(s)*
- SPAN 102B - Hispanic American Culture 3 *unit(s)* (V)
- SPAN 132 - Special Topics in Spanish for Careers 4 *unit(s)*
- SPAN 160A - Hispanic Culture 4 *unit(s)*
- SPAN 170 - Spanish Translation: Theory and Practice 4 *unit(s)*

Total Units Required (15-17 units)

Japanese Minor

The Japanese minor offers a firm grounding in the language and culture of the Japanese-speaking world. The minor is open to students from any major.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Proficiency

- JPN 1A - Elementary Japanese 4 *unit(s)* (C2)
- JPN 1B - Elementary Japanese 4 *unit(s)* (C2)

Minor Requirements (20 units)

- JPN 25A - Intermediate Japanese 4 *unit(s)* (C2)
- JPN 25B - Intermediate Japanese 4 *unit(s)* (C2)
- JPN 101A - Advanced Japanese 4 *unit(s)*
- JPN 101C - Advanced Conversational Japanese 4 *unit(s)*
- JPN 102A - Japanese Culture 4 *unit(s)*

Total Units Required (20 units)

Journalism Minor

The Minor in Journalism is offered by the School of Journalism and Mass Communications. The Journalism minor introduces students to concepts and skills in multimedia journalism. Students learn the importance of updating news stories in real time across all media and gain experience in a variety of student media through coursework. It provides the ideal complement to any major.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Complete the following requirements and one student media production class.

- JOUR 61 - Writing for Print, Electronic and Online Media 3 *unit(s)*
- JOUR 130 - Student Media Apprentice 3 *unit(s)*
- JOUR 132 - Magazine Reporting, Print and Online 3 *unit(s)*
- MCOM 63 - New Media 3 *unit(s)*

Choose One Course From:

- JOUR 50 - Navigating the News 3 *unit(s)*
- MCOM 72 - Mass Communication and Society 3 *unit(s)* (D)

Student Media Production

Choose One Course From:

- JOUR 140A - Student Media Production: Update News 1-3 unit(s)
- JOUR 140B - Student Media Production: Spartan Daily 1-3 unit(s)
- JOUR 140C - Student Media Production: The Spear 3 unit(s)
- JOUR 140D - Student Media Production: Magazine 3 unit(s)

Total Units Required (18 units)

Latin American Studies Minor

The interdepartmental minor in Latin American Studies, offered by the Department of World Languages and Literatures, is designed to complement a wide variety of academic majors by providing knowledge of Latin American affairs, culture, and politics. Courses may be selected from art, world languages and literatures, history, Chicana and Chicano studies, philosophy, political science, and theater arts.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (19 units)

Novice high proficiency (ACTFL scale) as determined by the LAS advisor in Spanish, Portuguese or French.

Core Courses (10 units)

- SPAN 102B - Hispanic American Culture 3 unit(s) (V)
- Any LAS advisor-approved Latin American History Course 4 unit(s)

Complete One Course From:

- FREN 102B - Francophone Cultures: Through Literature and Cinema 3 unit(s) (V)
- PORT 102B - Brazilian Culture 3 unit(s)

Other Courses (9 units)

Complete three courses approved by the LAS advisor from the list of electives:

Humanities

Spanish sequence (SPAN 160A, SPAN 160B and SPAN 160C) when focus is on Latin American Studies.

- ARTH 182A - Art of the Americas 3 unit(s)
- DANC 102 - Dance in World Cultures 3 unit(s) (V)
- SPAN 140A - Spanish American Literature 4 unit(s)
- SPAN 140B - Spanish American Literature II 4 unit(s)

- SPAN 160A - Hispanic Culture 4 unit(s)
- SPAN 160B - Hispanic Linguistics 4 unit(s)
- SPAN 160C - Hispanic Literature 4 unit(s)

Social Sciences

- HIST 162 - Colonial Latin America 4 unit(s)
- HIST 163 - Modern Latin America, 1800-Present 4 unit(s)
- HIST 181 - Advanced Topics in American History 4 unit(s)
- CCS 105 - Chicanos: United States/Mexico Relations 3 unit(s)
- POLS 146 - Latin American Politics 4 unit(s)

Business

- BUS3 161A - Applied Organizational Behavior 3 unit(s)

Total Units Required (19 units)

New courses, or courses not listed above, with content directly relevant to the study of Latin America, may be substituted for any of the electives on approval of coordinator.

Linguistics Minor

The Minor in Linguistics, offered by the Department of Linguistics and Language Development, provides training in the scientific study of language for students whose professional competence would be enhanced by a more thorough knowledge of linguistics than is provided in their majors.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Proficiency (0-10 units)

Must meet one of the following criteria:

For students for whom English is not the native language, one year of college level English study may fulfill this requirement.

- One year of college level language other than student's native language 10 unit(s)
- Demonstrated equivalent competence 0 unit(s)
- One year of college level American Sign Language 6 unit(s)

Minor Requirements (15 units)

Core Courses (9 units)

- LING 101 - Introduction to Linguistics 3 *unit(s)*
- LING 111 - Introduction to Linguistic Phonetics 3 *unit(s)*
- LING 112 - Introduction to Syntax 3 *unit(s)*

Electives (6 units)

Six units of upper division coursework, approved by the linguistics advisor

Total Units Required (15 units)

Literature Minor

The Minor in Literature is offered by the Department of English and Comparative Literature.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (17-19 units)

Lower Division Courses (6-7 units)

Complete two courses from:

- ENGL 50 - Beginnings to the American Experiment 3 *unit(s)*
- ENGL 60 - Literatures of the Atlantic World, 1680-1860 4 *unit(s)*
- ENGL 70 - Emerging Modernisms and Beyond 3 *unit(s)*

Upper Division Courses (11-12 units)

Select 11-12 units of Upper Division Advisor Approved Literature classes.

- ENGL 101 - Introduction to Literary Criticism 4 *unit(s)*
- ENGL 109 - Writing and the Young Writer 4 *unit(s)*
- ENGL 112A - Children's Literature 3 *unit(s)*
- ENGL 112B - Literature for Young Adults 4 *unit(s)*
- ENGL 113 - Gothic and Horror Fiction 4 *unit(s)*
- ENGL 115 - The Bible as Literature 4 *unit(s)*
- ENGL 116 - Myth in Literature 4 *unit(s)*
- ENGL 117A - American Literature, Film, & Culture 3 *unit(s)*
- ENGL 117B - Global Film, Literature, and Cultures 3 *unit(s)*
- ENGL 122 - Topics in Comparative World Literature 4 *unit(s)*
- ENGL 123A - Literatures of the Americas 3 *unit(s)*
- ENGL 123B - Literatures of Africa 3 *unit(s)*
- ENGL 123C - Literatures of the Pacific 3 *unit(s)*
- ENGL 123D - Literatures of Asia 3 *unit(s)*

- ENGL 125 - Ancient Literatures 4 unit(s)
- ENGL 126 - Holocaust Literature 3 unit(s)
- ENGL 139 - Visiting Authors 4 unit(s)
- ENGL 140A - Old English 4 unit(s)
- ENGL 141 - Medieval Literature 4 unit(s)
- ENGL 142 - Chaucer 4 unit(s)
- ENGL 144 - Shakespeare I 4 unit(s)
- ENGL 145 - Shakespeare and Performance 4 unit(s)
- ENGL 146 - Studies-Early Modern British Literature 4 unit(s)
- ENGL 151 - 20th and 21st Century Poetry 4 unit(s)
- ENGL 153 - Studies in the British Novel Before 1900 4 unit(s)
- ENGL 156 - Black Women's Writing 3 unit(s)
- ENGL 160 - Topics in American Literature 4 unit(s)
- ENGL 162 - Indigenous American Literatures 4 unit(s)
- ENGL 163 - Asian American Literatures 4 unit(s)
- ENGL 166 - Latinx Literatures 4 unit(s)
- ENGL 167 - Steinbeck 4 unit(s)
- ENGL 168 - The American Novel 4 unit(s)
- ENGL 169 - Ethnicity in American Literature 3 unit(s)
- ENGL 171 - Pop Cultures 4 unit(s)
- ENGL 172 - The Arts in U.S. Society 3 unit(s)
- ENGL 176 - The Short Story 4 unit(s)
- ENGL 177 - Topics in Fiction Since 1900 4 unit(s)
- ENGL 180 - Individual Studies 1-3 unit(s)
- ENGL 181 - Special Topics 4 unit(s)
- ENGL 182 - Women, Gender, and Sexuality in Literature 4 unit(s)
- ENGL 183 - Major Authors 4 unit(s)
- ENGL 184 - Queer Literary Studies 4 unit(s)
- ENGL 190 - Honors Colloquium 4 unit(s)

The following courses do not count for the Literature Minor: ENGL 100WB, ENGL 100W, ENGL 103, ENGL 105, ENGL 106, ENGL 107, ENGL 110, ENGL 120, ENGL 127, ENGL 128, ENGL 129, ENGL 130, ENGL 131, ENGL 133, ENGL 135, ENGL 173, ENGL 199.

Total Units Required (17-19 units)

Middle East Studies Minor

The interdisciplinary Minor in Middle East Studies, offered by the Department of Humanities, provides background for students whose professional goals include the promotion of mutual understanding, tolerance, and peace in the region. The Middle East Studies minor is especially recommended to students seeking a career in international law, business, economic development, health care, education, or religious studies. Courses encompass the disciplines of art history, anthropology, business, humanities, political science, sociology, and religious studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18-20 units)

Required Course (3 units)

- MDES 145 - Middle Eastern Traditions 3 unit(s) (V)

Traditions Courses (6 units)

Complete two courses from:

- RELS 70 - Gods, Guns, Gurus, Grails-World Religion 3 unit(s) (C2)
- MDES 156 - Islam, Politics and the West 3 unit(s)
- MDES 189 - Feminist Perspectives on Gender and Religion 3 unit(s)

Electives (6-7 units)

Complete Two Courses From:

Art History

- MDES 183A - Art of Egypt and Mesopotamia 3 unit(s)

Religious Studies

- MDES 90 - Bible History and Literature 3 unit(s) (C2)

Political Science

- MDES 144 - Middle Eastern Politics 4 unit(s)

University Electives (3-4 units)

- ANTH 11 - Cultural Anthropology 3 unit(s) (D)
- ANTH 146 - Culture and Conflict 3 unit(s) (V)
- BUS2 133A - International Marketing 3 unit(s)
- BUS5 146 - Fundamentals of Project Management 3 unit(s)
- BUS3 161A - Applied Organizational Behavior 3 unit(s)
- COMM 174 - Intercultural Comm and Structural Inequalities 3 unit(s) (S)
- GEOG 12 - World Regional Geography 3 unit(s) (D)
- MDES 180 - Individual Studies 1-4 unit(s)
- MDES 184 - Directed Reading 1-4 unit(s)
- MUSC 19 - Music in World Cultures 3 unit(s) (C1)
- POLS 4 - Introduction to International Relations 3 unit(s) (D)
- POLS 154 - U.S. Foreign Policy: Formulation and Administration 4 unit(s)
- SOCI 162 - Race and Ethnic Relations 3 unit(s) (S) (or other appropriate courses selected with approval of the minor advisor (including individual studies, directed reading, and/or up to 6 units of foreign language studies))

Total Units Required (18-20 units)

Music Minor

The Minor in Music is offered by the School of Music.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Music Fundamentals (3 units)

Complete One Sequence From:

Sequence One:

- MUSC 9 - Music Fundamentals 3 *unit(s)*

Sequence Two:

- MUSC 1A - Music Theory IA 2 *unit(s)*
- MUSC 1B - Musicianship IB 1 *unit(s)*

Sequence Three:

- MUSC 2A - Music Theory IIA 2 *unit(s)*
- MUSC 2B - Musicianship IIB 1 *unit(s)*

Performance Skills (2 units)

Complete 2 units from:

- MUSC 25A - Piano Proficiency I 1 *unit(s)*
- MUSC 25B - Piano Proficiency II 1 *unit(s)*
- MUSC 26A - Voice Fundamentals 1 *unit(s)*
- MUSC 28 - Guitar Fundamentals 1 *unit(s)*
- MUSC 40A - Jazz Improvisation - I 2 *unit(s)*

Ensemble Performance (2 units)

Complete 2 units from:

- MUSC 50A - ENS: Concert Choir *1 unit(s)*
- MUSC 51A - ENS: University Chorales - Treble Choir *1 unit(s)*
- MUSC 51B - ENS: University Chorales - Spartan Glee *1 unit(s)*
- MUSC 52 - ENS: Opera Theater *1 unit(s)*
- MUSC 53 - ENS: University Symphony Orchestra *1 unit(s)*
- MUSC 54 - ENS: Symphonic Band *1 unit(s)*
- MUSC 55 - ENS: Wind Ensemble *1 unit(s)*
- MUSC 57 - ENS: Jazz Orchestra *1 unit(s)*
- MUSC 59 - ENS: Afro-Latin Jazz Ensemble *1 unit(s)*
- MUSC 60A - ENS: Choraliers *1 unit(s)*
- MUSC 60D - ENS: Collegium Musicum *1 unit(s)*
- MUSC 60E - ENS: Jazz Singers *1 unit(s)*
- MUSC 60F - ENS: Small Jazz Ensembles *1 unit(s)*
- MUSC 60H - ENS: Percussion Ensemble *1 unit(s)*
- MUSC 60J - ENS: String Ensemble *1 unit(s)*
- MUSC 60K - ENS: Brass Ensemble *1 unit(s)*
- MUSC 60L - ENS: Woodwind Ensemble *1 unit(s)*
- MUSC 60M - ENS: Saxophone Ensemble *1 unit(s)*
- MUSC 60O - ENS: Trombone Ensemble *1 unit(s)*
- MUSC 150A - ENS: Concert Choir *1 unit(s)*
- MUSC 151 - ENS: University Chorales *1 unit(s)*
- MUSC 152 - ENS: Opera Theater *1 unit(s)*
- MUSC 153 - ENS: University Symphony Orchestra *1 unit(s)*
- MUSC 154 - ENS: Symphonic Band *1 unit(s)*
- MUSC 155 - Wind Ensemble *1 unit(s)*
- MUSC 157 - ENS: Jazz Orchestra *1 unit(s)*
- MUSC 159 - ENS: Afro-Latin Jazz Ensemble *1 unit(s)*
- MUSC 160A - ENS: Choraliers *1 unit(s)*
- MUSC 160D - ENS: Collegium Musicum *1 unit(s)*
- MUSC 160E - ENS: Jazz Singers *1 unit(s)*
- MUSC 160F - ENS: Small Jazz Ensembles *1 unit(s)*
- MUSC 160H - ENS: Percussion Ensemble *1 unit(s)*
- MUSC 160J - ENS: String Ensemble *1 unit(s)*
- MUSC 160K - ENS: Brass Ensemble *1 unit(s)*
- MUSC 160L - Woodwind Ensemble *1 unit(s)*
- MUSC 160M - ENS: Saxophone Ensemble *1 unit(s)*

Music Electives (11 units)

Complete eleven units from:

- MUSC 10A - Music Appreciation *3 unit(s)* (C1)
- MUSC 10B - Introduction to Music *3 unit(s)* (C1)
- MUSC 12 - Medieval and Renaissance Music *3 unit(s)* (C2)
- MUSC 13 - Music Technology *1 unit(s)* (3 units required)
- MUSC 19 - Music in World Cultures *3 unit(s)* (C1)
- MUSC 110 - Baroque and Classical Music History *3 unit(s)*
- MUSC 111 - Romantic and Modern Music History *3 unit(s)*
- MUSC 117 - Music and Culture in Latin America *3 unit(s)* (V)
- MUSC 120 - Worlds of Jazz *3 unit(s)* (S)

- MUSC 122A - Fundamental Techniques of Woodwinds: Flute, Clarinet, and Saxophone *1 unit(s)*
- MUSC 123A - Brass Fundamentals: Upper Brass *1 unit(s)*
- MUSC 125D - Percussion Techniques *1 unit(s)*
- MUSC 127A - Fundamental Techniques and Literature: Instrumental Upper Strings - Violin and Viola *1 unit(s)*
- MUSC 167 - Electro-Acoustic Music I *3 unit(s)*
- MUSC 168 - Electro-Acoustic Music II *3 unit(s)*
- MUSC 170A - Fundamentals of Sound Recording *3 unit(s)*
- MUSC 170B - Intermediate Sound Recording *3 unit(s)*
- MUSC 170C - Advanced Sound Recording Production *3 unit(s)*
- MUSC 185A - Music for Children *3 unit(s)*

Total Units Required (18 units)

Musical Theatre Minor

The Minor in Musical Theatre is offered by the Department of Film and Theatre.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (24 units)

Music (4 units)

- MUSC 9 - Music Fundamentals *3 unit(s)*
- MUSC 26A - Voice Fundamentals *1 unit(s)*

Dance (2 units)

- DANC 42A - Topics in Jazz Dance I *2 unit(s) (PE)*

Theatre Arts (12 units)

- TA 48 - Voice & Movement for the Actor *3 unit(s) (E)*
- TA 17 - Intermediate Acting *3 unit(s)*
- TA 103 - Musical Theatre *3 unit(s)*
- TA 121 - Topics in Performance History *3 unit(s)*

Electives (6 units)

Total Units Required (24 units)

Philosophy Minor

The Minor in Philosophy, offered by the Department of Philosophy, will expose the student to the history, traditions and methods of philosophy in a manner that helps students to productively assess their major course work within a broader philosophical perspective.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- Lower Division Philosophy courses chosen with Advisor 6 *unit(s)*
- Upper Division Philosophy courses chosen with Advisor 9 *unit(s)*
- An additional Lower or Upper Division Philosophy course chosen with Advisor 3 *unit(s)*

Total Units Required (18 units)

Photography Minor

The Minor in Photography, offered by the Department of Art and Art History, allows students to develop skills that will add valuable breadth and career flexibility to their primary degree.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (21 units)

- PHOT 40 - Beginning Photography 3 *unit(s)*
- PHOT 110 - Black and White Photography 3 *unit(s)*
- PHOT 112 - Color Photography 3 *unit(s)*
- PHOT 120 - Image and Idea 3 *unit(s)*
- PHOT 121 - Introduction to Studio Lighting 3 *unit(s)*

Complete One Course From:

- PHOT 113 - Alternative Photo Media 3 *unit(s)*
- PHOT 114 - Advanced Black and White Photography 3 *unit(s)*
- PHOT 115 - Intermediate Digital Imaging 3 *unit(s)*
- PHOT 122 - Advanced Lighting: Working with Strobes 3 *unit(s)*

- PHOT 123 - Photography as Illustration 3 *unit(s)*
- PHOT 197 - Senior Project Photography 3 *unit(s)*

Complete One Course From:

- PHOT 126 - History of Photography 3 *unit(s)*
- PHOT 129 - Professional Practices in Photography 3 *unit(s)*

Total Units Required (21 units)

Pictorial Art Minor

The Minor in Pictorial Art, offered by the Department of Art and Art History, allows students to develop skills in visual creativity and two-dimensional art practice that will add valuable breadth and career flexibility to their primary degree.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Preparation for the Minor (9 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 26 - Drawing II 3 *unit(s)*

Minor Requirements (12 units)

Complete four courses from the following. Twelve units of studio art work total. Must include 9 units of upper division studio art courses, 9 units of which are taken at San José State University.

- ART 25 - Expressive Drawing 3 *unit(s)*
- ART 151 - Topics in Screen-Printing 3 *unit(s)*
- ART 152 - Topics in Lithography 3 *unit(s)*
- ART 153 - Topics in Intaglio Processes 3 *unit(s)*
- ART 155 - Topics in Monotype 3 *unit(s)*
- ART 158 - Topics in Drawing III 3 *unit(s)*
- ART 162 - Watercolor 3 *unit(s)*
- ART 164A - Intermediate Painting 3 *unit(s)*
- ART 164B - Intermediate Painting II 3 *unit(s)*
- ART 165 - Topics in Figure Painting 3 *unit(s)*
- ART 166 - Topics in Advanced Painting 3 *unit(s)*

Total Units Required (21 units)

Portuguese Minor

The Portuguese minor offers a firm grounding in the language and culture of the Portuguese-speaking world. The minor is open to students from any major.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Proficiency

- PORT 1A - Elementary Portuguese I *4 unit(s) (C2)*
- PORT 1B - Elementary Portuguese II *4 unit(s) (C2)*

Minor Requirements (18 units)

- PORT 20A - Intermediate Portuguese *3 unit(s)*
- PORT 20B - Intermediate Portuguese *3 unit(s)*
- PORT 101A - Advanced Portuguese *3 unit(s)*
- PORT 101B - Advanced Portuguese *3 unit(s)*
- PORT 102A - Intro to Portuguese-Speaking Cultures *3 unit(s)*
- PORT 102B - Brazilian Culture *3 unit(s)*

Total Units Required (18 units)

Professional and Technical Writing Minor

The Minor in Professional and Technical Writing is offered by the Department of English and Comparative Literature.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (16 units)

Core Courses (16 units)

- ENGL 103 - Modern English *4 unit(s)*
- ENGL 106 - Professional and Technical Editing *4 unit(s)*
- ENGL 107 - Professional and Technical Writing *4 unit(s)*

Complete One Course From:

- ENGL 105 - Seminar in Advanced Composition 4 *unit(s)*
- ENGL 110 - UX Design and Visual Communication 4 *unit(s)*
- ENGL 129 - Writing for Professional Publications 4 *unit(s)*

Total Units Required (16 units)

Public Relations Minor

The Minor in Public Relations is offered by the School of Journalism and Mass Communications.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- MCOM 72 - Mass Communication and Society 3 *unit(s)* (D)
- JOUR 61 - Writing for Print, Electronic and Online Media 3 *unit(s)*
- PR 99 - Introduction to Public Relations 3 *unit(s)*
- PR 192 - Case Studies in Strategic Communication 3 *unit(s)*

Complete two courses from:

- PR 190 - Media and Influencer Relations 3 *unit(s)*
- PR 191 - Strategic Content Creation 3 *unit(s)*
- Approved electives in journalism, advertising, public relations or mass communications 3 *unit(s)*

Total Units Required (18 units)

Radio-Television-Film Minor

The Minor in Radio-Television-Film is offered by the Department of Film and Theatre.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Core Courses (12 units)

- RTVF 20 - Introduction to Audio for Film & Television 3 *unit(s)*
- RTVF 30 - Introduction to Film & Television Production 3 *unit(s)*
- RTVF 80 - Introduction to Media 3 *unit(s)*
- RTVF 82 - Introduction to Film History 3 *unit(s)*

Upper Division Electives (6 units)

With approval of minor advisor

Total Units Required (18 units)

Religious Studies Minor

The interdisciplinary Minor in Religious Studies, offered by the Department of Humanities, provides a basic understanding of religious beliefs and practices for those whose careers would benefit from familiarity with some religious traditions, such as those in teaching, business, journalism, social work, medicine, and law. The minor incorporates the study of religious traditions with a reflection on what religion is and how we understand it.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

- HUM 101 - Human Life: Let's Think About It 3 *unit(s)*
- Plus 12 additional units of which 6 must be upper division and 9 in RELS courses 12 *unit(s)*

One Course from the Following Can Be Included:

- AFAM 137 - Introduction to Black Religion 3 *unit(s)*
- ENGL 116 - Myth in Literature 4 *unit(s)*
- HIST 121A - Medieval Worlds, 400-1000 4 *unit(s)*
- HIST 121B - Medieval Worlds, 1000-1500 4 *unit(s)*

Total Units Required (15 units)

Sculpture Minor

The Minor in Sculpture, offered by the Department of Art and Art History, allows students to develop skills in visual creativity and three dimensional art practice that will add valuable breadth and career flexibility to their primary degree. Sculpture courses emphasize concept-development and cultural critique in addition to technical skill-building.

Students graduating with a Minor in Sculpture will be conversant in the historical, theoretical, and practical aspects of three-dimensional artmaking. For Art majors in other media (eg. Pictorial Art or Photography), the Minor in Sculpture facilitates the acquisition of interdisciplinary art practice. For non-Art majors, it develops both manual and conceptual capacities for three-dimensional expression. The Minor in Sculpture allows students to build skills in the following: woodworking; glass blowing and casting; jewelry and small metals; mold-making and casting in bronze, aluminum, and other materials; welding; installation art; figure modeling; and mixed-media sculpture. Students who are specifically interested in ceramic media should consider the Ceramic Art Minor instead.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (6 units)

- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*

Minor Requirements (12 units)

Complete four courses from the following. Twelve units of studio art work total. Must include 9 units of upper division studio art courses, 9 units of which are taken at San José State University.

- ART 47 - Introduction to Metalsmithing 3 *unit(s)*
- ART 135 - Topics in Moldmaking for Artists 3 *unit(s)*
- ART 137 - Figure Modeling 3 *unit(s)*
- ART 140 - Topics in Glass 3 *unit(s)*
- ART 141 - Topics in Advanced Glass 3 *unit(s)*
- ART 147 - Topics in Metalsmithing and Jewelry 3 *unit(s)*
- ART 149 - Topics in Jewelry and Small Sculpture 3 *unit(s)*
- ART 168 - Topics in Woodworking 3 *unit(s)*
- ART 169 - Topics in Metal Sculpture 3 *unit(s)*
- ART 170 - Topics in Fabricated Sculpture 3 *unit(s)*
- ART 172 - Intermediate Sculpture: System/Structure 3 *unit(s)*
- ART 173 - Topics in Installation Art 3 *unit(s)*

Total Units Required (18 units)

Spanish Language Media and Journalism Minor

The School of Journalism and Mass Communications in collaboration with the World Languages department offers a Minor in Spanish Language Media and Journalism, introducing practical skills and theoretical knowledge required for emerging media professionals to pursue a successful career in bilingual environments. The program is taught in a hybrid format, combining in-person and online modalities, to suit students' contextual needs.

The Minor provides multiple opportunities for students. First of all, it focuses on enhancing proficiency in Spanish language for domestic and global job markets that demand bilingual media professionals; secondly, it is designed to

help students to understand fully the media culture and specific approaches of Spanish Speaking countries and of Hispanic communities in the United States; and thirdly, this program invites students to help in fostering the full social and media representation of a community and a culture essential to understand California's and America's present and future.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (17 units)

Required Courses (14 units)

- JOUR 61 - Writing for Print, Electronic and Online Media 3 *unit(s)*
- JOUR 140AS - Student Media Production in Spanish 3 *unit(s)*
- SPAN 101A - Advanced Spanish 4 *unit(s)*
- SPAN 101B - Advanced Spanish 4 *unit(s)*

Elective (3-4 units)

Complete one course:

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D) (+US123 if both CCS 10A and CCS 10B completed)
- JOUR 132 - Magazine Reporting, Print and Online 3 *unit(s)*
- SPAN 102B - Hispanic American Culture 3 *unit(s)*
- SPAN 111 - Advanced Spanish Conversation 4 *unit(s)*
- SPAN 132 - Special Topics in Spanish for Careers 4 *unit(s)*
- SPAN 160B - Hispanic Linguistics 4 *unit(s)*
- SPAN 170 - Spanish Translation: Theory and Practice 4 *unit(s)*

Total Units Required (17 units)

Spanish Minor

The Spanish minor offers a firm grounding in the language and culture of the Spanish-speaking world. The minor is open to students from any major.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Proficiency

- SPAN 1A - Elementary Spanish 4 *unit(s)* (C2)
- SPAN 1B - Elementary Spanish 4 *unit(s)* (C2)

Minor Requirements (19-20 units)

- SPAN 25A - Intermediate Spanish 4 *unit(s)* (C2)
 - SPAN 25B - Intermediate Spanish 4 *unit(s)* (C2)
- OR**
- SPAN 20A - Spanish for Heritage Speakers I 4 *unit(s)* (C2)
 - SPAN 20B - Spanish for Heritage Speakers II 4 *unit(s)* (C2)
- AND**
- SPAN 101A - Advanced Spanish 4 *unit(s)*
 - SPAN 101B - Advanced Spanish 4 *unit(s)*

Complete One Course From:

- SPAN 102A - Spanish Culture 4 *unit(s)*
- SPAN 102B - Hispanic American Culture 3 *unit(s)* (V)

Total Units Required (19-20 units)

Note: In order to meet the minimum requirement of 12 units of coursework completely distinct and separate from the course work in one's major, students who have fulfilled SPAN 25A and SPAN 25B or SPAN 20A and SPAN 20B with the Language Proficiency Exam may need to take additional units.

Sports Journalism Minor

The Sports Journalism minor, offered by the School of Journalism and Mass Communications, is intended to introduce students to how to report, write, promote and produce sports for those outside the field of journalism, but still interested in working in a related aspect of the industry such as advertising, public relations, or English, Kinesiology, etc. This is aimed at students who love sports.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

- JOUR 61 - Writing for Print, Electronic and Online Media 3 *unit(s)*
- JOUR 130 - Student Media Apprentice 3 *unit(s)*
- JOUR 138 - Sports Journalism Investigation 3 *unit(s)*
- JOUR 140C - Student Media Production: The Spear 3 *unit(s)*

- KIN 164 - Sociocultural Perspectives 3 *unit(s)*

Total Units Required (15 units)

Studio Art Minor

The Minor in Studio Art, offered by the Department of Art and Art History, allows students to develop skills that will add valuable breadth and career flexibility to their primary degree.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Minor Support (6 units)

Lower division studio art courses

Core Courses (12 units)

Twelve units of studio art work total. Must include 9 units of upper division studio art courses, 6 units of which are taken at San Jose State University.

Total Units Required (18 units)

Theatre Arts Minor

The Minor in Theatre Arts, offered by the Department of Film and Theatre, provides a background in the theory and practice of the performing arts. The flexibility of the minor allows students to explore various theatrical disciplines, including playwriting, acting, directing, and design/technology.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Core Courses (9 units)

- TA 11 - Script Analysis 3 *unit(s)*
- TA 191 - Theatre Production Workshop 3 *unit(s)* (3 *unit* required)

Complete one course:

- TA 5 - Acting 3 *unit(s)* (C1)
- TA 55 - Intro to Design for Theatre 3 *unit(s)* (C1)

Electives (9 units)

Choose a combination of courses that add up to 9 units, 6 of which must be upper division.

- TA 5 - Acting 3 *unit(s)* (C1) (if not taken above)
- TA 10 - Theatre Appreciation 3 *unit(s)* (C1)
- TA 13 - Great Comedies for Theatre 3 *unit(s)* (C2)
- TA 17 - Intermediate Acting 3 *unit(s)*
- TA 48 - Voice & Movement for the Actor 3 *unit(s)* (E)
- TA 51A - Scenery and Props for the Performing Arts 1 *unit(s)*
- TA 51B - Costume for the Performing Arts 1 *unit(s)*
- TA 51C - Lighting & Sound for the Performing Arts 1 *unit(s)*
- TA 55 - Intro to Design for Theatre 3 *unit(s)* (if not taken above) (C1)
- TA 64 - Make-up for Performing Arts 3 *unit(s)*
- TA 91 - Scenic Painting & Props 1-3 *unit(s)* (3 *units* required)
- TA 100W - Writing Workshop: Theatre Arts 3 *unit(s)* (WID)
- TA 103 - Musical Theatre 3 *unit(s)*
- TA 110 - Advanced Acting 3 *unit(s)*
- TA 112 - Rehearsal and Performance 3 *unit(s)*
- TA 113 - Acting and Professional Career Prep 3 *unit(s)*
- TA 116 - Directing 3 *unit(s)*
- TA 117 - Practice in Acting or Directing 1-3 *unit(s)* (Repeatable for credit)
- TA 120 - Theatre History 3 *unit(s)*
- TA 121 - Topics in Performance History 3 *unit(s)*
- TA 127 - Contemporary Theatre 3 *unit(s)* (V)
- TA 128 - Introduction to Playwriting 3 *unit(s)*
- TA 129 - Advanced Playwriting 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*
- TA 148 - Voice & Movement for Performance 3 *unit(s)*
- TA 151 - Lighting Design for Performing Arts 3 *unit(s)*
- TA 153 - Costume Design for Performing Arts 3 *unit(s)*
- TA 154 - Scenic Design for Performing Arts 3 *unit(s)*
- TA 158 - Model Making & Drafting Film & Theatre 3 *unit(s)*
- TA 161 - Theatre Design Topics 3 *unit(s)*
- TA 168 - Stage Management 3 *unit(s)*
- TA 170A - Introduction to Acting and Directing for the Camera 3 *unit(s)*
- TA 170B - Advanced Acting and Directing for the Camera 3 *unit(s)*
- TA 191 - Theatre Production Workshop 3 *unit(s)*

Total Units Required (18 units)

Master(s)

Art, Art History and Visual Culture Concentration, MA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Arts in Art History and Visual Culture offers a broad education in art history including preparation for a Ph.D. degree program. It also helps to prepare students for a graduate library degree with a specialization in art history as well as a variety of positions including community college professor, researcher, museum curator, art administrator, conservator, and visual resource librarian.

Additional information is available in the Department of Art and Art History Office and on the department website: www.sjsu.edu/art.

Admissions Requirements

Admission to Classified Standing

Depending on their level of preparation, applicants can be admitted in either classified or conditionally classified standing. Admission requires two steps.

In addition to the university admission requirements, applicants must meet requirements for their area:

- Art History and Visual Culture: completion of 30 or more college-level semester units or equivalent in Art History courses with a minimum 3.0 GPA. At least 24 units should have been in upper-division Art History courses. Courses in related academic areas will be assessed in reviewing the qualifications of applicants. Reading knowledge of a foreign language related to the subject of the intended thesis research is strongly recommended.
 - Art Education: Completion of 45 or more college-level semester units or equivalent in appropriate Art courses with a minimum 3.0 GPA. At least 12 of these units must have been in Art History of which 6 units were upper-division courses and 3 units were in ART 138 - Elementary Art Methods or their equivalent.
- Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Admission to Conditionally Classified Standing

Applicants who meet minimum requirements for admission to the Graduate Division but do not meet all other (programmatic) requirements (i.e., lacking prerequisites or GPA) may be admitted to conditionally classified standing. They will be advanced to classified standing when the Art History graduate advisor certifies they have satisfied all appropriate requirements.

Requirements for Advancement to Graduate Candidacy

Candidacy denotes that the student is fully qualified to complete the final stages of the MA - Art and is thus eligible to enroll in ARTH 299 - Master's Thesis or ART 297B - Master's Project. In order to advance to candidacy, students must meet the university requirements for candidacy. General university requirements for advancement to

candidacy for the MA degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Additional departmental requirements for candidacy include:

- Secure commitment of three faculty members of the university, two of whom must be members of the Art and Art History faculty, to serve as members of the student's MA - Art project or thesis committee, with one regular Art faculty member agreeing to serve as chair. For candidates in Art History and Visual Culture, the chair of the committee and at least one other committee member must be art historians. This committee must approve the student's proposed program for the MA - Art degree no later than one month prior to the end of the semester preceding the one in which enrollment in the final project or thesis course(s) is planned.
- Submission of a proposed curriculum program conforming to university and departmental requirements. The proposed program must be approved by the Art graduate committee before the student may be considered for the MA - Art. The proposed program must list a total of 30 semester units, of which at least 15 must be in courses at the 200 level. The proposed program must include the required seminars and ARTH 299 - Master's Thesis or ART 297B - Master's Project. Electives to complete the 30 units may be drawn from approved 100 and 200-level courses.
- Passage of the first of two comprehensive exams and the language exam.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MA - Art Graduation Requirements

Requirements are as follows:

- Of the 30 units required, 21 must be in Art History and Visual Culture courses and 9 units may be in related areas of study. Five seminars (15 units) must be included. The MA - Art student with a concentration in Art History and Visual Culture must demonstrate reading knowledge of a foreign language related to the subject of the intended thesis research. The student must also pass a two-part comprehensive written examination designed to test general competence in Art History and Visual Culture. The second part of the exam is based on the candidate's thesis proposal once that has been approved by a pre-thesis committee. Attainment of candidacy and eligibility to enroll in ARTH 299 - Master's Thesis will be contingent upon satisfactory completion of all comprehensive and language examinations.

Thesis Requirements

- The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.
- Thesis Examination: The candidate for the MA - Art degree must successfully pass a final oral examination based on the thesis.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core Requirements (15 units)

Complete five courses from:

ARTH courses are repeatable for credit when course content changes

- ARTH 272 - Seminar in Renaissance Art 3 unit(s) (GWAR)
- ARTH 273 - Seminar in Baroque Art 3 unit(s)
- ARTH 274 - Seminar in Nineteenth Century Art 3 unit(s)
- ARTH 275 - Seminar in Twentieth Century Art 3 unit(s) (GWAR)
- ARTH 277 - Seminar in Historiography 3 unit(s)
- ART 282A - Seminar in the Theory and Criticism of Contemporary Art 3 unit(s)
- ART 282B - Seminar in Contemporary Art 3 unit(s) (GWAR)

Electives (12 units)

Up to 12 units of departmental graduate advisor-approved 100-level electives. Six units may be taken from other departments with graduate advisor approval.

Culminating Experience (3 units)

- 2 Comprehensive Qualifying Exams
- Language Examination

Complete One Option From (Plan A or Plan B):

Plan A (Thesis)

- ARTH 299 - Master's Thesis 3 unit(s)

Plan B (project)

- ART 297B - Master's Project 3 unit(s)

Total Units Required (30 units)

Elective courses must be planned in consultation with the Art History and Visual Culture Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Art, Digital Media Art Concentration, MFA

- Step I. Admission to MFA Classified Standing

- MFA - Art Advancement to Candidacy
- MFA - Art Completing Requirements
- Master's Requirements (60 units)
- Program Learning Outcomes

Step I. Admission to MFA Classified Standing

Applicants must meet university requirements for admission to classified standing as outlined in this catalog. In addition, they must meet the following requirements:

- Demonstrated interest in the area of study by a professional portfolio. The equivalent to a Bachelor of Fine Art (BFA) degree in the applicant's designated area of graduate emphasis is recommended. At least 6 upper-division units in art history are required.
- Successful completion of the application procedure for the MFA Admission Review. During the MFA Admission Review, appropriate materials documenting the applicant's creative work are examined by the art faculty to determine whether the quality of the work meets the standards expected for MFA graduate work. Applicants should submit copies of their creative materials for the MFA Admission Review; applicants should not submit their original materials unless requested to do so by the faculty. Applicants who pass the review and who meet minimum school and university requirements are admitted to classified standing for the following semester.

Applicants for the MFA Admission Review will be considered only if the review instructions have been carefully followed and all requested materials (including official transcripts) are supplied. For details, email or call the Department of Art and Art History at art@sjsu.edu or 408-924-4320. All materials should be submitted with the application to SJSU prior to the university's deadline.

Admission to Conditionally Classified Status

Applicants who meet the University's minimum requirements for graduate admission and whose creative work, as examined during the MFA Admission Review, shows promise but is not supported by traditional undergraduate preparation in Art may be admitted to conditionally classified status and provided with a list of requirements to be addressed as soon as they enroll. They will be advanced to classified status when the art graduate advisor certifies all appropriate requirements for classified standing have been satisfied. Applicants who have completed an MA - Art degree must meet all prerequisites and requirements for the MFA - Art degree program.

MFA - Art Advancement to Candidacy

Candidacy denotes that the classified graduate student is fully qualified to complete the final stages of the MFA - Art program and is thus eligible to enroll in ART 298A - MFA Project Planning Seminar and ART 298B - MFA Project. In order to attain candidacy, the student must meet the university requirements for advancement to candidacy as outlined in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, the student must:

- Formalize their MFA project committee by obtaining the signatures of at least three university faculty members (two must be members of the art faculty) to serve as members of the student's committee. A regular art faculty member who teaches in the student's major area of emphasis must serve as chair. This committee must approve the student's proposed program of study for the MFA - Art degree no later than one month prior to the end of the semester preceding the one in which the final project is created.
- The student must submit a proposed program of study conforming to university and school requirements on the Petition for Advancement to Candidacy form and filed according to university deadlines. The proposed program of study must be approved by the art graduate committee and the College of Graduate Studies before the student may be considered for the MFA - Art.

- Pass the Advancement to Candidacy (ATC) Review. This is an exhibition of original work that can be scheduled during any semester in one of the department's student galleries. Students must obtain signatures of two faculty members willing to serve on their culminating project committee, including at least one faculty member teaching in the designated area of emphasis, in order to apply to the ATC Review. Passing the review is necessary before the student may file for the Petition for Advancement to Candidacy and enroll in their culminating project classes, ART 298A and ART 298B.

Additional information regarding advancement to candidacy is available in the Art & Art History Department Office.

MFA - Art Completing Requirements

- General Requirements: The MFA - Art program requires a minimum of 60 units of approved courses completed after admission to classified status in the program, of which at least 30 units must be in courses at the 200 level. Electives to complete the 60 units may be drawn from approved 100 and 200 level courses. The program also requires the student to participate in regularly scheduled departmental activities such as studio visits by faculty, first-semester review, first-year review, and Advancement to Candidacy reviews.

- Required Courses: see below.

- All students must meet the university's graduation writing assessment requirement.

- MFA - Art Project: The culmination of the degree is the MFA - Art culminating project which must demonstrate the professional level of the candidate's accomplishment. After advancement to candidacy, the culminating project will be developed under the guidance of the candidate's MFA - ART project committee chair with the assistance of the project committee. Upon the committee's prior approval of the completed work, projects will be appropriately exhibited in accordance with departmental requirements.

All candidates must also submit to the Department of Art and Art History a satisfactory report of the project, following the department's approved format. MFA project reports will document the creative project and the creative process and context for that project with color images that illustrate each work in the project. The project report and the image record (in the case of studio projects) must be approved by the candidate's culminating project committee and by the art graduate advisor before the degree may be awarded.

- Final Examination: The candidate must successfully complete an oral examination based on the area of the MFA - Art culminating project.
- The application for graduation must be filed with the university Graduate Admissions and Program Evaluations (GAPE) according to the posted deadline during the semester prior to completion of degree requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (60 units)

Graduate Seminars and Critiques (12 units)

Graduate Seminars and Critiques in Area of Concentration

- ART 281 - Interdisciplinary Critique Seminar 3 unit(s) (9 units required)

Complete One Course From:

- ART 210 - Seminar in Digital Media Art 3 unit(s)
- ART 281 - Interdisciplinary Critique Seminar 3 unit(s)

Seminars (6 units)

- ART 282A - Seminar in the Theory and Criticism of Contemporary Art 3 *unit(s)*
- ART 282B - Seminar in Contemporary Art 3 *unit(s)* (GWAR)

Additional Course (3 units)

Choose one of the following:

- ART 174A - Museum and Gallery Operations 3 *unit(s)*
- ART 276 - Artists Teaching Art 3 *unit(s)*

Upper Division Art History (6 units)

Professional Writing Course (3 units)

- ART 200W - Professional Writing in Contemporary Art 3 *unit(s)* (GWAR)

Electives (24 units)

Special Study (3 units)

- ART 298A - MFA Project Planning Seminar 3 *unit(s)*

Culminating Experience (3 units)

- ART 298B - MFA Project 3 *unit(s)*

Total Units Required (60 units)

Art, Photography Concentration, MFA

- Step I. Admission to MFA Classified Standing
- MFA - Art Advancement to Candidacy
- MFA - Art Completing Requirements
- Master's Requirements (60 units)
- Program Learning Outcomes

Step I. Admission to MFA Classified Standing

Applicants must meet university requirements for admission to classified standing as outlined in this catalog. In addition, they must meet the following requirements:

- Demonstrated interest in the area of study by a professional portfolio. The equivalent to a Bachelor of Fine Art (BFA) degree in the applicant's designated area of graduate emphasis is recommended. At least 6 upper-division units in art history are required.

- Successful completion of the application procedure for the MFA Admission Review. During the MFA Admission Review, appropriate materials documenting the applicant's creative work are examined by the art faculty to determine whether the quality of the work meets the standards expected for MFA graduate work. Applicants should submit copies of their creative materials for the MFA Admission Review; applicants should not submit their original materials unless requested to do so by the faculty. Applicants who pass the review and who meet minimum school and university requirements are admitted to classified standing for the following semester. Applicants for the MFA Admission Review will be considered only if the review instructions have been carefully followed and all requested materials (including official transcripts) are supplied. For details, email or call the Department of Art and Art History at art@sjsu.edu or 408-924-4320. All materials should be submitted with the application to SJSU prior to the university's deadline.

Admission to Conditionally Classified Status

Applicants who meet the University's minimum requirements for graduate admission and whose creative work, as examined during the MFA Admission Review, shows promise but is not supported by traditional undergraduate preparation in Art may be admitted to conditionally classified status and provided with a list of requirements to be addressed as soon as they enroll. They will be advanced to classified status when the art graduate advisor certifies all appropriate requirements for classified standing have been satisfied. Applicants who have completed an MA - Art degree must meet all prerequisites and requirements for the MFA - Art degree program.

MFA - Art Advancement to Candidacy

Candidacy denotes that the classified graduate student is fully qualified to complete the final stages of the MFA - Art program and is thus eligible to enroll in ART 298A - MFA Project Planning Seminar and ART 298B - MFA Project. In order to attain candidacy, the student must meet the university requirements for advancement to candidacy as outlined in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, the student must:

- Formalize their MFA project committee by obtaining the signatures of at least three university faculty members (two must be members of the art faculty) to serve as members of the student's committee. A regular art faculty member who teaches in the student's major area of emphasis must serve as chair. This committee must approve the student's proposed program of study for the MFA - Art degree no later than one month prior to the end of the semester preceding the one in which the final project is created.
- The student must submit a proposed program of study conforming to university and school requirements on the Petition for Advancement to Candidacy form and filed according to university deadlines. The proposed program of study must be approved by the art graduate committee and the College of Graduate Studies before the student may be considered for the MFA - Art.
- Pass the Advancement to Candidacy (ATC) Review. This is an exhibition of original work that can be scheduled during any semester in one of the department's student galleries. Students must obtain signatures of two faculty members willing to serve on their culminating project committee, including at least one faculty member teaching in the designated area of emphasis, in order to apply to the ATC Review. Passing the review is necessary before the student may file for the Petition for Advancement to Candidacy and enroll in their culminating project classes, ART 298A and ART 298B.

Additional information regarding advancement to candidacy is available in the Art & Art History Department Office.

MFA - Art Completing Requirements

- General Requirements: The MFA - Art program requires a minimum of 60 units of approved courses completed after admission to classified status in the program, of which at least 30 units must be in courses at the 200 level. Electives to complete the 60 units may be drawn from approved 100 and 200 level courses. The program also

requires the student to participate in regularly scheduled departmental activities such as studio visits by faculty, first-semester review, first-year review, and Advancement to Candidacy reviews.

- Required Courses: see below.
- All students must meet the university's graduation writing assessment requirement.
- MFA - Art Project: The culmination of the degree is the MFA - Art culminating project which must demonstrate the professional level of the candidate's accomplishment. After advancement to candidacy, the culminating project will be developed under the guidance of the candidate's MFA - ART project committee chair with the assistance of the project committee. Upon the committee's prior approval of the completed work, projects will be appropriately exhibited in accordance with departmental requirements.

All candidates must also submit to the Department of Art and Art History a satisfactory report of the project, following the department's approved format. MFA project reports will document the creative project and the creative process and context for that project with color images that illustrate each work in the project. The project report and the image record (in the case of studio projects) must be approved by the candidate's culminating project committee and by the art graduate advisor before the degree may be awarded.

- Final Examination: The candidate must successfully complete an oral examination based on the area of the MFA - Art culminating project.
- The application for graduation must be filed with the university Graduate Admissions and Program Evaluations (GAPE) according to the posted deadline during the semester prior to completion of degree requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (60 units)

Graduate Seminars and Critiques (24 units)

Graduate Seminars and Critiques in Area of Concentration

- ART 281 - Interdisciplinary Critique Seminar 3 *unit(s)*
- ART 208 - Graduate Photography Critique 3 *unit(s)* (*ART 208 must be taken 5 times.*)

Additional courses

Complete two courses:

- ART 208 - Graduate Photography Critique 3 *unit(s)*
- ART 260 - Special Tutorials in Art 3 *unit(s)*
- ART 281 - Interdisciplinary Critique Seminar 3 *unit(s)*

Seminars (6 units)

- ART 282A - Seminar in the Theory and Criticism of Contemporary Art 3 *unit(s)*
- ART 282B - Seminar in Contemporary Art 3 *unit(s)* (*GWAR*)

Additional Course (3 units)

Complete one course from:

- ART 174A - Museum and Gallery Operations 3 *unit(s)*
- ART 276 - Artists Teaching Art 3 *unit(s)*

Upper Division Art History (6 units)

Professional Writing Course (3 units)

- ART 200W - Professional Writing in Contemporary Art 3 *unit(s)* (GWAR)

Electives (12 units)

Special Study (3 units)

- ART 298A - MFA Project Planning Seminar 3 *unit(s)*

Culminating Experience (3 units)

- ART 298B - MFA Project 3 *unit(s)*

Total Units Required (60 units)

Art, Pictorial Art Concentration, MFA

- Step I. Admission to MFA Classified Standing
- MFA - Art Advancement to Candidacy
- MFA - Art Completing Requirements
- Master's Requirements (60 units)
- Program Learning Outcomes

Step I. Admission to MFA Classified Standing

Applicants must meet university requirements for admission to classified standing as outlined in this catalog. In addition, they must meet the following requirements:

- Demonstrated interest in the area of study by a professional portfolio. The equivalent to a Bachelor of Fine Art (BFA) degree in the applicant's designated area of graduate emphasis is recommended. At least 6 upper-division units in art history are required.
- Successful completion of the application procedure for the MFA Admission Review. During the MFA Admission Review, appropriate materials documenting the applicant's creative work are examined by the art faculty to determine whether the quality of the work meets the standards expected for MFA graduate work. Applicants should submit copies of their creative materials for the MFA Admission Review; applicants should not submit their original materials unless requested to do so by the faculty. Applicants who pass the review and who meet minimum school and university requirements are admitted to classified standing for the following semester. Applicants for the MFA Admission Review will be considered only if the review instructions have been carefully followed and all requested materials (including official transcripts) are supplied. For details, email or call the Department of Art and Art History at art@sjsu.edu or 408-924-4320. All materials should be submitted with the application to SJSU prior to the university's deadline.

Admission to Conditionally Classified Status

Applicants who meet the University's minimum requirements for graduate admission and whose creative work, as examined during the MFA Admission Review, shows promise but is not supported by traditional undergraduate preparation in Art may be admitted to conditionally classified status and provided with a list of requirements to be addressed as soon as they enroll. They will be advanced to classified status when the art graduate advisor certifies all appropriate requirements for classified standing have been satisfied. Applicants who have completed an MA - Art degree must meet all prerequisites and requirements for the MFA - Art degree program.

MFA - Art Advancement to Candidacy

Candidacy denotes that the classified graduate student is fully qualified to complete the final stages of the MFA - Art program and is thus eligible to enroll in ART 298A - MFA Project Planning Seminar and ART 298B - MFA Project. In order to attain candidacy, the student must meet the university requirements for advancement to candidacy as outlined in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, the student must:

- Formalize their MFA project committee by obtaining the signatures of at least three university faculty members (two must be members of the art faculty) to serve as members of the student's committee. A regular art faculty member who teaches in the student's major area of emphasis must serve as chair. This committee must approve the student's proposed program of study for the MFA - Art degree no later than one month prior to the end of the semester preceding the one in which the final project is created.
- The student must submit a proposed program of study conforming to university and school requirements on the Petition for Advancement to Candidacy form and filed according to university deadlines. The proposed program of study must be approved by the art graduate committee and the College of Graduate Studies before the student may be considered for the MFA - Art.
- Pass the Advancement to Candidacy (ATC) Review. This is an exhibition of original work that can be scheduled during any semester in one of the department's student galleries. Students must obtain signatures of two faculty members willing to serve on their culminating project committee, including at least one faculty member teaching in the designated area of emphasis, in order to apply to the ATC Review. Passing the review is necessary before the student may file for the Petition for Advancement to Candidacy and enroll in their culminating project classes, ART 298A and ART 298B.

Additional information regarding advancement to candidacy is available in the Art & Art History Department Office.

MFA - Art Completing Requirements

- General Requirements: The MFA - Art program requires a minimum of 60 units of approved courses completed after admission to classified status in the program, of which at least 30 units must be in courses at the 200 level. Electives to complete the 60 units may be drawn from approved 100 and 200 level courses. The program also requires the student to participate in regularly scheduled departmental activities such as studio visits by faculty, first-semester review, first-year review, and Advancement to Candidacy reviews.
- Required Courses: see below.
- All students must meet the university's graduation writing assessment requirement.
- MFA - Art Project: The culmination of the degree is the MFA - Art culminating project which must demonstrate the professional level of the candidate's accomplishment. After advancement to candidacy, the culminating project will be developed under the guidance of the candidate's MFA - ART project committee chair with the assistance of the project committee. Upon the committee's prior approval of the completed work, projects will be appropriately exhibited in accordance with departmental requirements.

All candidates must also submit to the Department of Art and Art History a satisfactory report of the project, following the department's approved format. MFA project reports will document the creative project and the creative process

and context for that project with color images that illustrate each work in the project. The project report and the image record (in the case of studio projects) must be approved by the candidate's culminating project committee and by the art graduate advisor before the degree may be awarded.

- Final Examination: The candidate must successfully complete an oral examination based on the area of the MFA - Art culminating project.
- The application for graduation must be filed with the university Graduate Admissions and Program Evaluations (GAPE) according to the posted deadline during the semester prior to completion of degree requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (60 units)

Graduate Seminars and Critiques (12 units)

Graduate Seminars and Critiques in Area of Concentration

- ART 281 - Interdisciplinary Critique Seminar 3 *unit(s)* (12 units required)

Seminars (6 units)

- ART 282A - Seminar in the Theory and Criticism of Contemporary Art 3 *unit(s)*
- ART 282B - Seminar in Contemporary Art 3 *unit(s)* (GWAR)

Additional Course (3 units)

Complete One Course From:

- ART 174A - Museum and Gallery Operations 3 *unit(s)*
- ART 276 - Artists Teaching Art 3 *unit(s)*

Upper Division Art History (6 units)

Professional Writing Course (3 units)

- ART 200W - Professional Writing in Contemporary Art 3 *unit(s)* (GWAR)

Electives (24 units)

Special Study (3 units)

- ART 298A - MFA Project Planning Seminar 3 *unit(s)*

Culminating Experience (3 units)

- ART 298B - MFA Project 3 *unit(s)*

Total Units Required (60 units)

Art, Spatial Art Concentration, MFA

- Step I. Admission to MFA Classified Standing
- MFA - Art Advancement to Candidacy
- MFA - Art Completing Requirements
- Master's Requirements (60 units)
- Program Learning Outcomes

Step I. Admission to MFA Classified Standing

Applicants must meet university requirements for admission to classified standing as outlined in this catalog. In addition, they must meet the following requirements:

- Demonstrated interest in the area of study by a professional portfolio. The equivalent to a Bachelor of Fine Art (BFA) degree in the applicant's designated area of graduate emphasis is recommended. At least 6 upper-division units in art history are required.
- Successful completion of the application procedure for the MFA Admission Review. During the MFA Admission Review, appropriate materials documenting the applicant's creative work are examined by the art faculty to determine whether the quality of the work meets the standards expected for MFA graduate work. Applicants should submit copies of their creative materials for the MFA Admission Review; applicants should not submit their original materials unless requested to do so by the faculty. Applicants who pass the review and who meet minimum school and university requirements are admitted to classified standing for the following semester.

Applicants for the MFA Admission Review will be considered only if the review instructions have been carefully followed and all requested materials (including official transcripts) are supplied. For details, email or call the Department of Art and Art History at art@sjsu.edu or 408-924-4320. All materials should be submitted with the application to SJSU prior to the university's deadline.

Admission to Conditionally Classified Status

Applicants who meet the University's minimum requirements for graduate admission and whose creative work, as examined during the MFA Admission Review, shows promise but is not supported by traditional undergraduate preparation in Art may be admitted to conditionally classified status and provided with a list of requirements to be addressed as soon as they enroll. They will be advanced to classified status when the art graduate advisor certifies all appropriate requirements for classified standing have been satisfied. Applicants who have completed an MA - Art degree must meet all prerequisites and requirements for the MFA - Art degree program.

MFA - Art Advancement to Candidacy

Candidacy denotes that the classified graduate student is fully qualified to complete the final stages of the MFA - Art program and is thus eligible to enroll in ART 298A - MFA Project Planning Seminar and ART 298B - MFA Project. In order to attain candidacy, the student must meet the university requirements for advancement to candidacy as outlined in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, the student must:

- Formalize their MFA project committee by obtaining the signatures of at least three university faculty members (two must be members of the art faculty) to serve as members of the student's committee. A regular art faculty member who teaches in the student's major area of emphasis must serve as chair. This committee must approve the student's proposed program of study for the MFA - Art degree no later than one month prior to the end of the semester preceding the one in which the final project is created.
- The student must submit a proposed program of study conforming to university and school requirements on the Petition for Advancement to Candidacy form and filed according to university deadlines. The proposed program of study must be approved by the art graduate committee and the College of Graduate Studies before the student may be considered for the MFA - Art.
- Pass the Advancement to Candidacy (ATC) Review. This is an exhibition of original work which can be scheduled during any semester in one of the department's student galleries. Students must obtain signatures of two faculty members willing to serve on their culminating project committee, including at least one faculty member teaching in the designated area of emphasis, in order to apply to the ATC Review. Passing the review is necessary before the student may file for the Petition for Advancement to Candidacy and enroll in their culminating project classes, ART 298A and ART 298B.

Additional information regarding advancement to candidacy is available in the Art & Art History Department Office.

MFA - Art Completing Requirements

- **General Requirements:** The MFA - Art program requires a minimum of 60 units of approved courses completed after admission to classified status in the program, of which at least 30 units must be in courses at the 200 level. Electives to complete the 60 units may be drawn from approved 100 and 200 level courses. The program also requires the student to participate in regularly scheduled departmental activities such as studio visits by faculty, first-semester review, first-year review, and Advancement to Candidacy reviews.
- **Required Courses:** see below.
- All students must meet the university's graduation writing assessment requirement.
- **MFA - Art Project:** The culmination of the degree is the MFA - Art culminating project which must demonstrate the professional level of the candidate's accomplishment. After advancement to candidacy, the culminating project will be developed under the guidance of the candidate's MFA - ART project committee chair with the assistance of the project committee. Upon the committee's prior approval of the completed work, projects will be appropriately exhibited in accordance with departmental requirements.
All candidates must also submit to the Department of Art and Art History a satisfactory report of the project, following the department's approved format. MFA project reports will document the creative project and the creative process and context for that project with color images that illustrate each work in the project. The project report and the image record (in the case of studio projects) must be approved by the candidate's culminating project committee and by the art graduate advisor before the degree may be awarded.
- **Final Examination:** The candidate must successfully complete an oral examination based on the area of the MFA - Art culminating project.
- The application for graduation must be filed with the university Graduate Admissions and Program Evaluations (GAPE) according to the posted deadline during the semester prior to completion of degree requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (60 units)

Graduate Seminars and Critiques (12 units)

Graduate Seminars and Critiques in Area of Concentration

- ART 281 - Interdisciplinary Critique Seminar 3 *unit(s)* (12 units required)

Seminars (6 units)

- ART 282A - Seminar in the Theory and Criticism of Contemporary Art 3 *unit(s)*
- ART 282B - Seminar in Contemporary Art 3 *unit(s)* (GWAR)

Additional Course (3 units)

Complete one course from:

- ART 174A - Museum and Gallery Operations 3 *unit(s)*
- ART 276 - Artists Teaching Art 3 *unit(s)*

Upper Division Art History (6 units)

Professional Writing Course (3 units)

- ART 200W - Professional Writing in Contemporary Art 3 *unit(s)* (GWAR)

Electives (24 units)

Special Study (3 units)

- ART 298A - MFA Project Planning Seminar 3 *unit(s)*

Culminating Experience (3 units)

- ART 298B - MFA Project 3 *unit(s)*

Total Units Required (60 units)

Computational Linguistics, MS

The MS Computational Linguistics program, jointly offered by the Department of Linguistics and Language Development and the Department of Computer Science, prepares students with advanced knowledge and skills for Computational Linguistics careers. It features a computing-based curriculum and instructs students in the theory and practice of language, linguistics and applied linguistics, and computer science to prepare students for job careers in automated text analysis, machine translation, grammar checking, speech synthesis & recognition, artificial intelligence, machine learning, web search, information retrieval, big data analytics, and more. The program also prepares students for entry into doctoral programs in a wide variety of interdisciplinary fields such as computational linguistics, natural language processing, computer science, artificial intelligence, information research, media studies, and human-computer interaction. Its integrated coursework provides students with strong computing, analytical, and linguistics skills to understand and solve problems for business and research, with strong societal and cultural implications.

Admission Requirements

Candidates must meet all of the university admission requirements. Students can be admitted in either classified or conditionally classified standing. While the expectation is that (at least at first) most students will enter the MS in Computational Linguistics after finishing the BS Computer Science and Linguistics, some may come from other backgrounds and therefore need prerequisites.

To be admitted to classified standing, applicants must have earned a Bachelor's degree in linguistics, science, or engineering (e.g., applied math, statistics, computer science, and software engineering) from a regionally accredited institution with a minimum GPA of 3.0 (based on a 4.0 scale), and have completed all program prerequisites listed below. Two to three letters of recommendation are also required.

To enter this program with classified standing, a student must have passed the following prerequisites courses (with the listed required grades in some cases):

- A two-semester series of calculus courses covering integration and partial derivation (e.g. MATH 30 and MATH 31 at SJSU), with a grade of B or better
- A linear algebra course (e.g., MATH 39 at SJSU), with a grade of B or better
- A discrete mathematics course (e.g. MATH 42 at SJSU) with a grade of B or better
- A statistics and probability theory course (e.g., MATH 105 or MATH 161A at SJSU)
- A course on Python programming (e.g. CS 22A at SJSU)
- A course on object-oriented programming (e.g. CS 46A at SJSU)
- An introductory data structures course (e.g. CS 46B at SJSU)
- An introductory linguistics course (e.g. LING 101 at SJSU)
- A Natural Language Processing or computational linguistics course (e.g. LING 165 at SJSU)

Applicants from countries in which the native language is not English must submit TOEFL scores. Minimum TOEFL scores acceptable for admission are 600 (paper-based), 250 (computer-based), or 100 (internet-based).

Advancement to Candidacy

The student must obtain a grade of B or better in each of LING 220 and LING 221, complete at least 15 units towards the degree with at least a 3.0 GPA, and meet all other university requirements, including the Graduation Writing Assessment Requirement (GWAR), before being advanced to candidacy.

Students must maintain an overall grade point average (GPA) of 3.0 at all times, otherwise they will be placed on academic notice and required to raise the overall GPA above the 3.0 minimum during the subsequent semester (failing to do so will result in disqualification from the program).

Graduation Requirements

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). This requirement is satisfied by taking CS 200W or LLD 250W in the MS Computational Linguistics program.

Culminating Experience

MS Computational Linguistics students must complete one of the following two options:

- Plan A (Linguistics-focused project): LING 298 and/or LING 299 (2 semesters)
- Plan B (Natural Language Processing-focused project): CS 297 and CS 298 or CS 299

Both plans require two semesters of enrollment in 6-unit coursework in order to conduct the proposed project or thesis study. The student is responsible for securing the commitment of a full-time tenured or tenure-track faculty member in either Department of Linguistics and Language Development or Department of Computer Science who agrees to serve as their primary advisor. The student must also secure the commitments of two additional members, one of whom must be a full-time tenured or tenure-track faculty member at SJSU. Either plan requires writing a manuscript in a formal format describing original computational linguistics research, which is submitted for review by the student's committee. In addition, the student must successfully pass a comprehensive oral examination, according to the standard assessment used in the home department of the primary advisor, by the student's committee based on the conducted project or thesis study.

Master's Requirements (30 units)

Core Courses (15 units)

- LING 220 - Computational Linguistics I 3 *unit(s)*
- LING 221 - Computational Linguistics II 3 *unit(s)*
- LING 230 - Seminar in Linguistics 3 *unit(s)*
- CS 273 - Topics in Natural Language Processing 3 *unit(s)*

Graduation Writing Assessment Requirement

Complete one course:

- CS 200W - Graduate Technical Writing 3 *unit(s)* (GWAR)
- LLD 250W - Becoming a Professional in Linguistics/TESOL 3 *unit(s)* (GWAR)

Electives (9 units)

Complete three courses with consultation and approval from the program coordinator:

- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 153 - Concepts of Compiler Design 3 *unit(s)*
- CS 154 - Formal Languages and Computability 3 *unit(s)*
- CS 156 - Introduction to Artificial Intelligence 3 *unit(s)*
- CS 171 - Introduction to Machine Learning 3 *unit(s)*
- CS 256 - Topics in Artificial Intelligence 3 *unit(s)*
- CS 271 - Topics in Machine Learning 3 *unit(s)*
- CS 272 - Reinforcement Learning and Sequential Decision Making 3 *unit(s)*
- CS 274 - Topics in Web Intelligence 3 *unit(s)*
- LING 111 - Introduction to Linguistic Phonetics 3 *unit(s)*
- LING 112 - Introduction to Syntax 3 *unit(s)*
- LING 113 - Introduction to Phonology 3 *unit(s)*
- LING 114 - Introduction to Semantics and Discourse 3 *unit(s)*

- LING 125 - Introduction to Historical and Comparative Linguistics 3 *unit(s)*
- LING 161 - Psycholinguistics 3 *unit(s)*
- LING 162 - Introduction to Morphology 3 *unit(s)*
- LING 166 - Sociolinguistics 3 *unit(s)*
- LING 167 - Multilingualism and Language Contact 3 *unit(s)*
- LING 201 - Phonology: Theory and Applications 3 *unit(s)*
- LING 202A - Syntactic Theory 3 *unit(s)*
- LING 203 - Semantic Structures 3 *unit(s)*
- LING 213 - Linguistic Field Methods 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*

Culminating Experience (6 units)

Complete one option (Plan A or Plan B)

Plan A (Linguistics-focused project)

- Comprehensive oral exam
- LING 298 - Individual Study 1-4 *unit(s)*
- LING 299 - Master's Thesis 1-6 *unit(s)*

Plan B (Natural Language Processing-focused project)

- Comprehensive oral exam
- CS 297 - Preparation for Writing Project or Thesis 3 *unit(s)*
Complete one course:
- CS 298 - Master's Writing Project 3 *unit(s)*
- CS 299 - Master's Thesis 3 *unit(s)*

Total Units Required (30 units)

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Creative Writing, MFA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Master's Requirements (44 units)
- Program Learning Outcomes

The Master of Fine Arts degree in Creative Writing, offered by the Department of English and Comparative Literature, is the recognized terminal degree that offers the minimum professional training deemed necessary by the major schools in the United States for university and college teaching and for positions in the publishing industry. It is also the degree most frequently held by professional writers.

For additional information, please see the MFA program website.

Admissions Requirements

Requirements for Admission to Classified Standing

Applicants must meet university requirements for admission to the Graduate Division and classified standing as outlined in this catalog. In addition, they must meet the following department requirements:

- Earned a 3.0 grade point average in major courses.
- Demonstrate ability in Creative Writing by submitting a creative writing portfolio in Fiction (20-30 pages), Creative Nonfiction (20-30 pages), Poetry (10 pages), or Scriptwriting (20-30 pages).
- Be approved by the departmental MFA in Creative Writing Committee. For each annual cycle, applications are due by February 1, when the review will begin.

Achieved one of the following:

- Possess a bachelor's degree or master's degree in English, Creative Writing, or a related field from an accredited institution.
- Passed a minimum of 12 semester hours in English, Creative Writing, or a related field beyond freshman composition.
- Demonstrated equivalent literary training or experience as determined by the Director of the MFA in Creative Writing Program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Admission to Conditionally Classified Standing

Students who do not qualify for classified standing but who meet university requirements for graduate admission and whose past performance and creative writing ability give promise of satisfactory completion of requirements for admission to classified graduate standing may, with the approval of the departmental MFA in Creative Writing Committee, be admitted as conditionally classified in the MFA program.

Requirements for Advancement to Graduate Candidacy

Candidacy denotes that the classified graduate student is fully qualified to complete the final stages of the MFA in Creative Writing program and is thus eligible to enroll in ENGL 291 and ENGL 299. In order to advance to candidacy, the student must meet the university requirements for advancement to candidacy as outlined in this catalog. The university requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Most graduate-level literary seminars meet the GWAR. In addition, the student must:

- complete 24 units of an approved 44-unit program with a GPA of 3.0 or better. At least one-half of these units must be graduate-level (i.e., 200-numbered) courses. Any upper-division courses to be applied to the MFA must be approved in advance by the MFA Director.
- formalize his or her MFA thesis committee by obtaining the signatures of three university faculty members (two must be members of the Creative Writing or English faculty) to serve as members of the student's committee. A tenure-line Creative Writing faculty member who teaches in the student's major area of emphasis must serve as chair.
- propose to write a substantial full-length work, with critical introduction or preface (see below), in one of the four program emphases: Poetry, Fiction, Nonfiction, or Script Writing.

- sign up to take the MFA Comprehensive Examination, which a student must pass before an MFA degree is awarded.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

All candidates for the MFA degree in Creative Writing must complete a book-length thesis in their primary genre. The thesis must be approved by a three-member committee, of which at least two members must be full-time SJSU faculty. Thesis committees and projects are declared in the Departmental Thesis Proposal, which is submitted to the Graduate Committee of the Department of English & Comparative Literature the semester before the candidate registers for four units of ENGL 299D or ENGL 299.

At the time of filing for candidacy, MFA candidates must select from two options for filing the final documents. Plan A (Thesis), which we refer to as a University Thesis, will require enrollment in ENGL 299, and the resulting thesis will be reviewed by the College of Graduate Studies and published online, as described below. Plan B (Project), which the Department of English and Comparative Literature refers to as a Departmental Thesis, will require enrollment in ENGL 299D and is considered by the university as a "project" and thus not subject to review by the College of Graduate Studies nor to the policy requiring university theses to be published. Please note that the departmental requirements for the thesis itself as well as the composition of the thesis committee are the same under both options.

Candidates select their Thesis Plan on the Petition for Advancement to Graduate Candidacy form, typically submitted the semester prior to graduation (e.g., in October for May graduation, or in April for December graduation). Although the Candidacy Form lists three plans -- A, B, and C -- MFA candidates may select only Plan A or Plan B.

Plan A (Thesis): University Thesis

After approval by the three-member thesis committee, MFA candidates submit the final manuscript as a PDF to the University's College of Graduate Studies, where it is checked for format. Once certified by Graduate Studies, the PDF is published in two places: on ProQuest (a commercial academic publisher) and on ScholarWorks (the University's open-access repository). Distribution through these two channels assures that research generated by SJSU students is available to as many readers as possible. Candidates who wish to shield their work from public view temporarily, for example, to allow time for commercial publication, can request an embargo of up to five years. After the embargo expires, candidates can ask for an extension or allow the document to be released online. It is possible for access to be restricted to users of the SJSU campus network. Embargo and access options are chosen by candidates when they submit their theses to Graduate Studies.

Only theses submitted via Plan A are eligible for the University's Outstanding Thesis Award, a distinction given annually to the one or two exceptional theses in the entire university. The award is presented at graduation and includes a monetary stipend. Candidates should ask their thesis directors or department chairs for more information about this award.

Plan B (Project): Departmental Thesis

Under this option, the thesis manuscript is prepared according to University guidelines and approved by a three-member thesis committee, and then signed off by the Chair of the Graduate Committee and the Department Chair. The manuscript is not submitted to the College of Graduate Studies. Instead, candidates must deposit a printed, bound copy of their thesis in the collection of the Department of English & Comparative Literature and, optionally, on the thesis shelf of the University Library (binding paid for by the candidate). Because the Departmental Thesis is never published online, this option makes sense for MFA candidates who wish to give their work the maximum

possible protection. It is recommended for those students who wish to protect the copyright of their creative work for future publication.

Departmental Theses are neither eligible for the University's Outstanding Thesis Award nor for nomination to the Proquest Thesis Award.

Master's Requirements (44 units)

Core Courses (4 units)

- ENGL 291 - Lit Practicum 4 *unit(s)*

Workshops (20 units)

Complete 12 units in primary genre and 8 units in secondary genre from the following.

The workshop courses are all repeatable for credit as long as the topic has changed:

- ENGL 240 - Poetry Writing Workshop 4 *unit(s)*
- ENGL 241 - Fiction Writing Workshop 4 *unit(s)*
- ENGL 242 - Nonfiction Writing Workshop 4 *unit(s)*

Literary Research (8 units)

Complete eight units from:

- ENGL 202 - Poetic Craft and Theory 4 *unit(s)*
- ENGL 203 - Narrative Craft and Theory 4 *unit(s)*
- ENGL 204 - Seminar in Modern Approaches to Literature 4 *unit(s)* (GWAR)
- ENGL 208 - Seminar in Comparative Literature 4 *unit(s)* (GWAR)
- ENGL 211 - Seminar in Twentieth Century Poetry 4 *unit(s)* (GWAR)
- ENGL 215 - Seminar in Myth and Symbolism 4 *unit(s)* (GWAR)
- ENGL 216 - Seminar in Medieval English Literature 4 *unit(s)* (GWAR)
- ENGL 224 - Studies in English Early Modern Literature 4 *unit(s)* (GWAR)
- ENGL 225 - Seminar in Shakespeare 4 *unit(s)* (GWAR)
- ENGL 228 - Seminar in Genre Studies 4 *unit(s)* (GWAR)
- ENGL 230 - Seminar in Thematic Studies in British Literature 4 *unit(s)* (GWAR)
- ENGL 232 - Seminar in Form and Genre Studies in British Literature 4 *unit(s)*
- ENGL 233 - Seminar in Period Studies of British Literature 4 *unit(s)* (GWAR)
- ENGL 253 - Seminar in Period Studies of American Literature 4 *unit(s)* (GWAR)
- ENGL 254 - Seminar in Genre Studies of American Literature 4 *unit(s)* (GWAR)
- ENGL 255 - Seminar in Thematic Studies of American Literature 4 *unit(s)* (GWAR)
- ENGL 256 - Seminar in Twentieth Century British Literature 4 *unit(s)* (GWAR)

Professional Development (8 units)

Complete eight units from:

- ENGL 133 - Reed Magazine 4 *unit(s)*
- ENGL 257 - Seminar in the History of Rhetoric 4 *unit(s)*
- ENGL 259 - Seminar in Composition Studies 4 *unit(s)*

- ENGL 298 - Special Study 1-6 unit(s)
- Other literary research classes with consent of advisor

Culminating Experience (4 units)

Plan A (Thesis)

- ENGL 299 - University Thesis 1-6 unit(s) (4 units required)
- Comprehensive Exam

Plan B (Project)

- ENGL 299D - Departmental Thesis 1-6 unit(s) (4 units required)
- Comprehensive Exam

Total Units Required (44 units)

*Note that College of Graduate Studies requires all creative works that serve as theses (novels, poetry collections, screen plays, and so forth) to be accompanied by a preface. At a minimum of 10 pages, the preface should put the creative work in historical, cultural, literary, or other contexts. It should also expound on the literary influences on the student. The text must be written according to a style guide, MLA being the guide of choice in the English and Comparative Literature Department, and include formal literature citations and a References Cited section, both written in accordance with the style guide rules.

Elective courses must be planned in consultation with the English MA Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Design, MDes

- Admission Requirements
- Requirements for Advancement to Graduate Candidacy
- Master's Requirements (60 units)
- Program Learning Outcomes

The Master of Design (MDes) graduate program at SJSU offers advanced and rigorous studies in design with unique specializations in experience design and animation. Strategically located in California's Silicon Valley, at the center of a globally renowned technology and innovation hub, the MDes program at SJSU sits at the intersection of technology, industry and academia. With a focus on current professional practices, the MDes is an incubator for new ideas and methods. The MDes degree is comparable to an MFA and considered a terminal degree in fields where a PhD is not offered. Additional information is available on the Department of Design website.

Master of Design (MDes) with a Specialization in Animation

With a strong focus on both content creation and digital technology, our Master of Design with a Specialization in Animation is the perfect incubator for your creative ideas and animation career. The program is project based and tailored to nurture the creativity and vision of each student by providing opportunities for individual accomplishment. Ours is a creative community that will help promote the expression of unique and exceptional work.

This rigorous program pairs content creation with a strong technical component that goes hand in hand with its artistic aspects. Technical courses include CG animation, lighting, rendering, and building interactivity in animation and games.

Master of Design (MDes) with a Specialization in Experience Design

The experience design specialization is a two-year program built on multidisciplinary collaboration, design practice, new technology, research, and scholarship that seeks to push the boundaries of design for experience. Our aim is to develop new generations of creative leadership that can design for emerging complex challenges in the field of design and the world at large.

All courses are offered in Silicon Valley near tech companies, world-class museums, start-up companies and groundbreaking design firms. With easy access to San Francisco, Oakland and the surrounding Bay Area students can complete their degree while also pursuing internships and/or continuing their careers.

Admissions Requirements

Prospective students should have a demonstrable academic and/or professional background in the following areas. For the Experience Design Specialization: graphic design, industrial design, product design, user-experience design, user-interface design, interaction design, data visualization, information design and/or other related disciplines. For the Animation Specialization: storyboarding, animation, digital media, illustration, game development or fine arts. A strong portfolio and/or animation reel is required in order to be accepted into the program.

See the MDes program website for more information.

Requirements for Advancement to Graduate Candidacy

General university requirements for advancement to candidacy for the MDes degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR). Application for advancement to candidacy should be done by the middle of the semester before students intend to graduate.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

All students must complete a culminating experience in the form of a creative (master's) project under Plan B (degree without thesis plan) of the university's guidelines for master's degrees. This will consist of a public exhibition, oral presentation and a written element documenting research, process and exhibition. The master's project undergoes a thorough review and revision process under the guidance of the committee chair and with the assistance of the committee advisors.

Each student will form a master's project committee consisting of at least three members. Committee membership will consist of (1) a committee chair and (2) two to four committee advisors. The committee chair must be an SJSU tenured/tenure-track faculty member from the department of design. The committee advisors can come from academia or industry but must be approved by the committee chair. The selection of the committee chair will be finalized by the end of the fall semester of the first year. The selection of the committee advisors will be finalized by

the end of the spring semester of the first year. The committee is responsible for reviewing and advising the students development of a master's project and its documentation.

Satisfactory progress towards degree is determined by the following criteria: (1) committee chair must approve final pre-proposal presentation given in DSGN 291, (2) master's project committee must approve final proposal presentation given in DSGN 292, (3) master's project committee must endorse the outcome of the master's project as completed in DSGN 298. Unsatisfactory performance in any of these areas may result in the student being placed on administrative academic probation.

Master's Requirements (60 units)

Core Curriculum (36 units)

- DSGN 200W - Professional Writing in Design 4 *unit(s)* (GWAR)
- DSGN 201 - Graduate Seminar in Design 4 *unit(s)* *Students complete this course twice.*
- DSGN 203 - Contextual Studies 4 *unit(s)*
- DSGN 291 - Pre-Proposal 4 *unit(s)*
- DSGN 292 - Proposal 4 *unit(s)*
- DSGN 293 - Special Study 4 *unit(s)* *Students complete this course three times.*

Animation or Experience Design Specialization (20 units)

Animation Specialization Courses

- ANI 240 - Visual Narratives 2 *unit(s)*
- ANI 250 - Intellectual Property 2 *unit(s)*
- ANI 255 - Sound Landscapes 2 *unit(s)*
- ANI 257 - New Technologies Studio 4 *unit(s)*
- ANI 258 - Interactive Studio 2 *unit(s)*
- ANI 259 - Post Production Techniques 2 *unit(s)*
- ANI 260 - The Synthetic Image 2 *unit(s)*
- ANI 265 - Visual Styles for Animation 2 *unit(s)*
- ANI 270 - The Synthetic Movement 2 *unit(s)*

Experience Design (XD) Specialization Courses

- DSGN 210 - Graduate Studio: Experience Design 4 *unit(s)* *Students complete this course twice.*
Complete three courses from:
- DSGN 211 - Design Research Methodologies 4 *unit(s)*
- DSGN 212 - Human Dimensions in Experience Design 4 *unit(s)*
- DSGN 213 - Designing with Data & Emergent Technology 4 *unit(s)*
- DSGN 280 - Professional Practices 4 *unit(s)*

Culminating Experience (4 units)

- DSGN 298 - Master's Project 4 *unit(s)*

Total Units Required (60 units)

English, MA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The written word grounds the Master of Arts in English. Its students learn to analyze literature and to write on literary topics at an advanced level. Students complete a rigorous program of courses that introduce them to cutting-edge research while training them to understand a range of theoretical and literary-historical frameworks for understanding literature. Before students earn a Master of Arts in English, they pass a two-part comprehensive exam. They also may choose to write a thesis. Students have the option to engage in graduate study in rhetoric and to train as college-level writing teachers. The program also offers students pathways to prepare for doctoral work.

Additional information is available in the Department of English and Comparative Literature Office and on the MA program website.

Admissions Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the Master of Arts in English. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Admission to Classified Standing

In addition to meeting the minimum university admission requirements for the Graduate Division as outlined in this catalog, applicants must have:

- 3.0 grade point average in English or literature courses.
- a minimum of 24 semester hours of acceptable undergraduate upper-division course work in English or other literary studies.
- Earned 2 semesters (3 quarters) credit in a foreign language course or have the equivalent fluency as attested to by a credible academic source.
- Approval by the department graduate committee.

In addition to the university application requirements, applicants to the English MA must submit a writing sample directly to the MA advisor.

Admission to Conditionally Classified Standing

Applicants who do not qualify for classified standing but who do meet university requirements for graduate admission and whose past performance gives promise of satisfactory completion of requirements for graduate admission to classified standing may, with approval of the department graduate committee, be admitted as conditionally classified in the English MA program. Generally, this category is used if the applicant has not yet earned the equivalent fluency of 2 semesters/3 quarters of credit in a foreign language course OR an applicant has not yet completed 24 units of upper-division coursework in literature but otherwise shows promise as a graduate student.

Requirements for Advancement to Graduate Candidacy

Candidacy denotes that the student is fully qualified to complete the final stages of the MA, English. In order to achieve candidacy, students must meet the university requirements. General university requirements for advancement to candidacy for the MA degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR). MA, English students must complete ENGL 201, the program GWAR course, before they can apply for candidacy. Application for advancement to candidacy should be done by the middle of the semester before students intend to graduate.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MA - English Graduation Requirements

Students must complete an approved 30-unit program with a grade point average of 3.0 or better. At least 21 of these units must be graduate-level (i.e., 200-numbered) courses. Any undergraduate coursework to be applied to the MA program must be approved in advance by the graduate advisor.

Included in these 30 units, are the ENGL 201 and ENGL 297. The ENGL 297 requirement will be waived if a student completes a thesis (which requires 6 units of ENGL 299 in lieu of ENGL 297 and one 4-unit graduate-level course).

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students choose Plan A (Thesis) or Plan B (Comprehensive Examinations) as their program culminating experience.

Plan A (Thesis)

To receive credit for ENGL 299 units, students must submit a thesis proposal to the department graduate committee by the deadline in the semester prior to the one in which the student plans to take the 299 units and complete the thesis.

The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee (made up of three readers arranged by the student and approved by the department graduate committee).

Students choosing the Plan A (Thesis) option must also pass the two-part MA, English comprehensive examinations but are not required to enroll in ENGL 297.

Plan B (Comprehensive Examinations)

Students choosing this option must enroll in ENGL 297 and pass the two-part MA comprehensive examinations. They are also required to take an additional 4-unit elective.

Master's Requirements (30 units)

Core Courses (4 units)

- ENGL 201 - Materials and Methods of Literary Research 4 *unit(s)* (GWAR)

Electives (20 units)

Five additional graduate-level courses chosen with MA advisor's approval

Culminating Experience (6 units)

Complete One Option (Plan A Thesis Plus Comp Exam or Plan B Comp Exam Only):

Plan A (Thesis, plus Comprehensive Exam)

- ENGL 299 - University Thesis 1-6 *unit(s)* (6 units required)
- Comprehensive Exam

Plan B (Comprehensive Exam)

- ENGL 297 - MA Comprehensive Exam Preparation 2 *unit(s)*
- Comprehensive Exam
- One additional graduate-level course chosen with MA advisor's approval

Total Units Required (30 units)

Elective courses must be planned in consultation with the English MA Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 6.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Linguistics, MA (Not Accepting Students)

- Requirements for Admission to Conditionally Classified Standing
- Requirements for Admission to Classified Standing
- Advancement to Candidacy
- Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

Linguistics, the scientific study of human language, explores what language is, how it works, and which properties human languages have in common. Our curriculum focuses on understanding how different aspects of language work and on how the languages of the world work and on how this understanding can be applied to support our culturally diverse society. Students in the Department of Linguistics and Language Development (LLD) are part of an ethnically and linguistically diverse student body, taught by nationally and internationally recognized faculty. Our research infrastructure includes a state-of-the-art computer lab, a phonology lab, and access to computerized language data. Approximately 25% of our students come from other countries and contribute greatly to our programs.

The MA Linguistics program provides students with an interdisciplinary education in the scientific study of language. Courses in general linguistics develop the ability to analyze data, to propose and refine theories about how language works. Elective courses in computational linguistics serve students interested in speech technology and natural language processing. Other electives in sociolinguistics, multilingualism, and applied linguistics emphasize the role of language in society, including in education, and language variation and change. Graduates in linguistics offer a set of highly specialized skills to IT companies and to organizations whose work places a premium on communication with linguistically diverse audiences. Many graduates pursue careers with companies specializing in these areas. Other graduates pursue teaching careers in language and linguistics in domestic and overseas institutions. A smaller but significant number of linguistics graduates enter PhD programs for more advanced study.

Requirements for the MA Linguistics include those established by the department. For information concerning university requirements, see the Academic Requirements section.

Requirements for Admission to Conditionally Classified Standing

Students holding an accredited baccalaureate degree and who otherwise satisfy the graduate level admissions requirements of San José State University (in the case of students with baccalaureate degrees from a university where English is not the principal language of instruction the minimum score of 577, computer score of 233, or Internet-based score of 90 on the TOEFL or 7.0 on IELTS) are eligible for admission as conditionally classified students. Students must have a grade point average of at least 3.0 in the last 60 semester (90 quarter) units.

Requirements for Admission to Classified Standing

In addition to the above requirements for conditionally classified standing, students in the MA Linguistics program are eligible for admission as classified graduate students if they have completed at least twelve-semester units of linguistics courses equivalent to San José State University's LING 101, LING 111, LING 112, and LING 114 with a grade of "B" or better in each of these classes.

Students admitted as conditionally classified may complete the requirements for classified standing after admission to the program; however, a "B" grade must be achieved in all prerequisite courses. Additionally, the granting of classified standing is subject to the coordinator's review of the conditionally classified student's work.

Advancement to Candidacy

The requirements for advancement to candidacy for the MA Linguistics are those established by the university and the department. For information see the Graduate Policies and Procedures section of this catalog.

Graduation Requirements

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). In the MA Linguistics, this is satisfied with the core course LLD 250W. For more information on the GWAR, please see Graduation Writing Assessment Requirement (GWAR) section.

Culminating Experience

Students have the option of completing the MA - Linguistics under one of two plans:

Plan A (Thesis)

Completion of 30 units; approved thesis proposal and thesis. The thesis option allows a student to pursue research in an area of common interest to the student and a faculty member. A thesis proposal may grow out of a course or be developed in LING 298, and must be approved by the student's advisor and thesis committee members. For more information, visit the Thesis and Dissertation Information website.

Plan B (Comprehensive Exam)

Completion of 30 units; passing of a comprehensive examination.

Master's Requirements (30 units)

Core Courses (18 units)

- LING 113 - Introduction to Phonology 3 *unit(s)*
- LING 201 - Phonology: Theory and Applications 3 *unit(s)*
- LING 202A - Syntactic Theory 3 *unit(s)*
- LING 203 - Semantic Structures 3 *unit(s)*
- LING 213 - Linguistic Field Methods 3 *unit(s)*
- LLD 250W - Becoming a Professional in Linguistics/TESOL 3 *unit(s)* (GWAR)

Culminating Experience (12 units)

Complete One Option (Plan A or Plan B)

Plan A (Thesis) (12 units)

- LING 299 - Master's Thesis 1-6 *unit(s)* (1-3 *units* required)
- Two Electives 6 *unit(s)*

Plan B (Comprehensive Exam) (12 units)

- Four electives 12 *unit(s)*
- Comprehensive Exam 0 *unit(s)*

Elective Courses (6-12 units)

Elective courses must be planned in consultation with the Graduate Advisor. At least 3 elective units must be at the 200-level.

Complete two electives (6 units) if completing Culminating Experience Plan A and four electives (12 units) if completing Culminating Experience Plan B:

- LING 115 - Corpus Linguistics 3 *unit(s)*
- LING 124 - Introduction to Speech Technology 3 *unit(s)*
- LING 125 - Introduction to Historical and Comparative Linguistics 3 *unit(s)*
- LING 161 - Psycholinguistics 3 *unit(s)*
- LING 162 - Introduction to Morphology 3 *unit(s)*
- LING 165 - Introduction to Natural Language Processing 3 *unit(s)*
- LING 166 - Sociolinguistics 3 *unit(s)*
- LING 167 - Multilingualism and Language Contact 3 *unit(s)*
- LING 298 - Individual Study 1-4 *unit(s)*
- LING 299 - Master's Thesis 1-6 *unit(s)*
- LLD 270 - Second Language Acquisition 3 *unit(s)*
- LLD 271 - Intercultural Communication and Second Language Acquisition 3 *unit(s)*

Total Units Required (30 units)

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Mass Communications, MS

- Admission Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The School of Journalism and Mass Communications offers a 30-unit, four-semester Master of Science in Mass Communications degree program that culminates with a professional standard project. The curriculum was designed to help students master the concepts and skills that are driving emerging communication technologies in public relations, advertising, and journalism. Elective units allow students to tailor the program to their interests.

Information about the Master of Science in Mass Communications is available on the website of the School of Journalism and Mass Communications website.

Admission Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system at calstate.edu/apply and meet all the university admission requirements. Applications meeting university graduate

admission standards will be reviewed by the School of Journalism and Mass Communications. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Admission to Classified Standing

The School admits students in the fall semester only. Applicants are responsible for obtaining information on admissions criteria and deadlines from the JMC School Graduate Coordinator or the main school office.

To be admitted to the program a prospective student must:

- Complete an application for admission to the university, submit required transcripts and pay the required application fees.
- Complete a 250-500 word essay on the applicant's career objectives and upload it on the same application site as above.
- Obtain two letters of recommendation from current or former professors and/or employers who can testify to the candidate's ability to pursue an advanced academic degree. These letters should be sent directly to the Graduate Coordinator of the program. At least one recommendation letter must be from a current or former professor unless the applicant has not taken any courses during the previous five years.
- Foreign students must score at least 600 on the TOEFL (90 on the iBT) and must demonstrate English proficiency in a written essay.
- Grade point averages are given considerable weight in evaluating applications, but are not the sole criterion. An applicant should have an average of 3.0 or better (3.3 for foreign students) in the last two years of undergraduate study and the undergraduate major. Exceptions may be made for applicants if the candidate has had significant professional experience in the mass media, offers strong letters of recommendation or other evidence indicating a potential for success in graduate study.

Applicants must meet requirements for graduate admission; however, no particular specialization in undergraduate work is required of a candidate.

Requirements for Advancement to Candidacy

To be advanced to candidacy for the Master of Science degree, a student must first meet all university requirements for the degree as stated in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. That requirement is met by taking MCOM 210 (a required course in the program).

The student must demonstrate an aptitude for advanced work in communications, as measured by instructor appraisals, evaluation of previous academic work, recommendations by qualified professionals, or other assessments.

The student will meet with the graduate coordinator to develop a formal course of study. The MS degree-approved program will be individually designed to meet the specific objectives of each student. It will take into consideration the nature of previous undergraduate work and post-graduate work completed, as well as any professional and related occupational experience. The proposed graduate course of study must be approved by the graduate coordinator before the student may be considered a candidate for the MS, Mass Communications.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

In consultation with the department graduate coordinator, the candidate will develop and pursue a program of study. The candidate must successfully complete all requirements of the selected plan including the course work specified in the Master's Degree Approval Program.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

All students in this program follow Plan B (Project) for their culminating experience.

Plan B (Project)

Plan B requires the successful completion of a professionally-oriented project employing multiple media and an oral presentation to a faculty-student audience. Projects should reflect the values of journalism, advertising, or public relations. Projects are designed and completed in a two-semester sequence.

Master's Requirements (30 units)

Core Courses (15 units)

- MCOM 210 - Media and Social Issues 3 *unit(s)* (GWAR)
- MCOM 215 - New Media Visionaries 3 *unit(s)*
- MCOM 284 - Advanced User Experience 3 *unit(s)*
- MCOM 285 - Web Design and Development 3 *unit(s)*
- MCOM 295 - Mass Communications Research 3 *unit(s)*

Electives (9 units)

Nine units of electives approved by graduate advisor. 100- or 200-level courses in the School or other departments, related to the candidate's career objective and culminating experience topic.

Culminating Experience (6 units)

Plan B (Project)

Students take 3 units of MCOM 298A and MCOM 298B in consecutive semesters.

- MCOM 298A - Master's Project I 3 *unit(s)*
- MCOM 298B - Master's Project II 3 *unit(s)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Music Education, MA

- Special Session Program Information
- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

Advisor: Diana Hollinger

The Master of Arts in Music Education, offered by the School of Music, is designed for the student with a career goal in music education. It provides a broad foundation in educational philosophy, theory, and history in research and practice for a solid grounding for continuing work in K-12 education, community music, and other pursuits, and as preparation for further advanced study. The MA in Music Education is a two-year, 30-unit program focusing on a one-on-one study with an advisor, courses, and practicums in education theory, issues and research in conjunction with seminars in music research and writing, music history, and music theory. The degree culminates with the Written Culminating Exams (WCE), and the completion of a music education thesis (Plan A) or project (Plan B).

Special Session Program Information

Academic Programs offered through Special Session are operated by the Professional and Continuing Education (PaCE). Registration and enrollment in a Special Session course or program will follow the special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the PaCE website for more information.

Additional information is available in the School of Music Office and at the program website.

Admissions Requirements

You will need to apply separately to the university to obtain approval for graduate admissions and to the department to obtain admission into the Master of Arts - Music Education. The School of Music graduate program requires applicants to have a bachelor's degree in Music from a regionally accredited institution and to be in good academic standing at the last college or university attended. In rare circumstances, students with degrees in non-music areas who demonstrate artistic potential for graduate study in Music may be admitted to the program. The School of Music requires a minimum GPA of 3.00 in the last 60 units of undergraduate coursework. All required transcripts and supporting documents should be sent directly to the university.

Students from a country where the official language was not English are required to submit a TOEFL (Test of English as a Foreign Language), PTE (Pearson Test of English), or International English Language Testing System (IELTS) score. The minimum entrance score for the TOEFL is 96 (iBT, iBT Home & Paper Edition), with a score of 5 in the Writing Section. The minimum score for the PTE is 68; for the IELTS, the minimum score is 7.0. All test scores must be less than 2 years old. Test scores must be sent directly from the Educational Testing Service office (institution code 4687), Pearson Office, or IELTS office directly to SJSU.

Please see "Graduate Program Test Requirements" for more information. The School of Music does not require the GRE (Graduate Record Exam).

Portfolio and Letters of Recommendation

The submission of a portfolio of work is required including a curriculum vitae, video recording of a teaching episode, statement of teaching philosophy, and a sample undergraduate term paper on an education topic. An interview is also required. Please see the School of Music website for specific portfolio requirements.

The School of Music requires three letters of recommendation addressing the applicant's potential for graduate-level work in music to be sent to the Music Education area advisor.

Admission to Classified Standing

Graduate students admitted to the School of Music are usually admitted in "conditionally classified" status. This status is normal for all entering graduate students, who must demonstrate a bachelor's level competence in music history and music theory by passing the Graduate Entrance Evaluations given during Pre-Instruction before the start of the fall semester. Students who pass their Entrance Evaluations may then become "graduate classified" and are eligible to take all 200-level graduate seminars after completing MUSC 200. Students who fail portions of the Evaluation will remain conditionally classified and will be required to remediate with the appropriate coursework before taking graduate seminars beyond MUSC 200. Coursework taken as remediation is not applied to the Master's degree requirement units.

Students who fail the entire Entrance Evaluation will not be admitted into the program.

Requirements for Advancement to Candidacy

Candidacy denotes that the student is fully qualified to complete the final stages of the MA. In order to achieve candidacy, students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MA degree are detailed in the Graduate Policies and Procedures section. Advancement to candidacy requires that the student be in good standing with a 3.0 GPA or better in a minimum of 9 units of letter-graded coursework as a graduate student in 100- or 200-level courses in the degree program as indicated by all courses on the Petition for Advancement to Graduate Candidacy. These courses must conform to university and departmental requirements, and the area and graduate advisors must approve the proposed program. The proposed program must list a total of 30 semester units, including the appropriate number of "core" courses, area of specialization courses, required ensembles, and supervised graduate study.

The student must be "graduate classified" and have met and cleared their conditions for admission to the program indicated by their results in the Graduate Entrance Evaluation in music history and music systems/theory. Candidacy also includes successful completion of the Graduation Writing Assessment Requirement (GWAR), which in the School of Music is MUSC 200.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MA - Music Education

Thesis: In Plan A, six units are devoted to the preparation and writing of a thesis guided by the candidate's major professor and approved by a committee. After final approval by the advisor and thesis committee, the thesis is submitted to Graduate Studies for review. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The successfully reviewed thesis is then submitted for publication.

Project: In Plan B, six units are devoted to the preparation and production of a written project.

Written Culminating Exams (WCE): At the end of their studies, students demonstrate their thorough grasp of music history, music systems/theory, and their field of specialization through the Written Culminating Exams (WCE). Students must pass all sections of the examination to be awarded their master's degree

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core Courses (15 units)

- MUSC 200 - Methods of Music Research & Writing 3 *unit(s)* (GWAR)
- MUSC 201 - Seminar in Music History 3 *unit(s)*
- MUSC 202 - Seminar in Music Systems & Theory 3 *unit(s)*

Complete Two Courses From:

- MUED 221 - Foundations of Music Education 3 *unit(s)*
- MUED 228 - Research in Music Education 3 *unit(s)*
- MUED 232 - Directions and Issues in Music Education 3 *unit(s)*

Area of Specialization (9 units)

- Nine units of 200-level graduate and approved 100-level elective courses in area of specialization 9 *unit(s)*

Culminating Experience (6 units)

- Written Culminating Exam 0 *unit(s)*

Choose One Plan From:

Plan A

- MUSC 299 - Master's Thesis 1-3 *unit(s)* (6 *units required*)

Plan B

- MUSC 224 - Supervised Graduate Study 1-2 *unit(s)* (6 *units required*)

Total Units Required (30 units)

Elective courses must be planned in consultation with the area coordinator and the School of Music Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Music, MM

- Admission Requirements
- Advancement to Candidacy
- University Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Music graduate program in the School of Music offers training for careers in performance, conducting, composition, research, and teaching. We also provide preparation for further advanced study in ten distinct areas:

- Composition
- Choral conducting
- Instrumental conducting
- Instrumental performance
- Jazz studies
- Keyboard studies
- Music education
- Music history
- Vocal performance

Our MM, Music degree program is a 30-unit course of study, typically taken in four semesters over two years, and consists of graduate seminars, one-on-one private lessons, performance ensembles, and area of specialization coursework. The program culminates with the master's exam and the completion of a graduate recital, project, thesis, or music composition.

Additional information is available in the School of Music Office and at the department website.

Admission Requirements

University Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MM, Music program. See Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Information.

Program Requirements

Students need to apply separately to the university to obtain approval for university-level admission and to the department to obtain admission into the Master of Music Program. All required transcripts and supporting documents should be sent directly to the university. The School of Music graduate program requires applicants to:

- Have a **bachelor's degree in Music** from a regionally accredited institution;
- Be in **good academic standing** at the last college or university attended;
- Have a minimum **GPA** of 3.00 in the last 60 units of undergraduate coursework;
- Students from a country where the **official language is not English** are required to submit a TOEFL (Test of English as a Foreign Language), PTE (Pearson Test of English), or International English Language Testing System (IELTS) score. The minimum entrance score for the TOEFL is 590 (paper-based), 243 (computer-based), or 96 (internet-based), with a score of 5 in the Writing Section. The minimum score for the PTE is 68; for the IELTS, the minimum score is 7.0. All test scores must be less than 2 years old. Test scores must be sent directly from the Educational Testing Service office (institution code 4687), Pearson Office, or IELTS office directly to SJSU.
- **Audition, Portfolio, Interview**
- Conducting and Performance: a live (preferred) or unedited recorded audition is required for conducting and performance specializations. Please see the School of Music website for specific requirements of individual performance areas.
- Composition, Education, History, Systems/Theory: the submission of a portfolio of work is required for all academic specializations. Please see the School of Music website for specific requirements of individual academic areas.
- Individual areas may also require an interview.
- Submit three **letters of recommendation** addressing the applicant's potential for graduate-level work in music to be sent to the appropriate performance area advisor.

The School of Music does not require the GRE (Graduate Record Exam).

Admission to Classified Standing

Graduate students admitted to the School of Music are usually admitted in "conditionally classified" status. This status is normal for all entering graduate students, who must demonstrate a bachelor's level competence in music history and music theory by passing the Graduate Entrance Evaluations given during Pre-Instruction before the start of the fall semester. Students who pass their Entrance Evaluations may then become "graduate classified" and are eligible to take all 200-level graduate seminars after completing MUSC 200. Students who fail one or more portions of the Evaluation will remain conditionally classified and will be required to remediate with the appropriate coursework before taking graduate seminars beyond MUSC 200. Coursework taken as remediation is not applied to the Master's degree requirement units. Students who fail the entire Entrance Evaluation will not be admitted into the program. Please see the "Graduate Program Test Requirements" for more information

Advancement to Candidacy

Candidacy denotes that the student is fully qualified to complete the final stages of the MM. In order to achieve candidacy, students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the Master's degree are detailed in the Graduate Policies and Procedures section. Advancement to candidacy requires that the student be in good standing with a 3.0 GPA or better in a minimum of 9 units of letter-graded coursework as a graduate student in 100- or 200-level courses in the degree program as indicated by all courses on the Petition for Advancement to Graduate Candidacy. These courses must conform to university and departmental requirements, and the area and graduate advisors must approve the proposed program. The proposed program must list a total of 30 semester units, including the appropriate number of "core" courses, area of specialization courses, required ensembles, and supervised graduate study.

The student must be "graduate classified" and have met and cleared their conditions for admission to the program indicated by their results in the Graduate Entrance Evaluation in music history and music systems/theory. Candidacy also includes successful completion of the Graduation Writing Assessment Requirement (GWAR), which in the School of Music is MUSC 200.

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. All students must satisfy Graduation Writing Assessment Requirement (GWAR) and culminating experience as outlined in the degree requirements.

Program Requirements

The Music master's degree is based on 12 units of four "core" graduate seminars, beginning with MUSC 200, and 12 units of area courses and ensembles. Students with the academic specializations (Plan A), 6 units of thesis/composition supervision are taken in preparation for completing a thesis or composition. Students in performance specializations (Plan B), 6 units of private lessons with an individual teacher are taken in preparation for their master's recital or project. All required prerequisite course work must be passed with a grade of "B" or better and a minimum 3.0 GPA must be maintained in order to continue with the graduate program. To complete the program, students take their Written Culminating Exams (WCE) in their final semester.

Master's Requirements (30 units)

Core Courses (12 units)

- MUSC 200 - Methods of Music Research & Writing 3 *unit(s)* (GWAR)
- MUSC 201 - Seminar in Music History 3 *unit(s)*
- MUSC 202 - Seminar in Music Systems & Theory 3 *unit(s)*

Complete One Course From:

- MUSC 203 - Seminar in Style & Performance Practices 3 *unit(s)*
- MUSC 220 - Seminar in Advanced Conducting 3 *unit(s)*

Area of Specialization (12 units)

Students must complete twelve (12) units of graduate 200-level and approved 100-level elective courses in one area of specialization. Areas of specialization include:

- Composition
- Music History
- Music Theory
- Music Education
- Choral Conducting
- Instrumental Conducting
- Jazz Studies
- Performance: Woodwinds, Brass & Percussion
- Performance: Piano

- Performance: Voice

Culminating Experience (6 units)

Students choose a Plan A (Composition or Thesis) or Plan B (Project or Recital) option as their program culminating experience. All students must also successfully complete the Written Culminating Exams (WCE).

Plan A (Composition or Thesis)

Six units are devoted to the preparation and writing of an advisor-approved thesis on a topic approved by the candidate's major professor. Students choosing the thesis option must secure the commitment of three faculty members of the university, two of whom must be members of the permanent faculty, to serve as members of the student's Plan A (Composition or Thesis) committee, with one permanent faculty member agreeing to serve as chair. After final approval by the major advisor and thesis committee members, the thesis is submitted to Graduate Studies. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines.

- MUSC 224 - Supervised Graduate Study 1-2 unit(s) (0-4 units requires)
- MUSC 299 - Master's Thesis 1-3 unit(s) (2-6 units required)
- Written Culminating Exam 0 unit(s)

Plan B (Project or Recital)

Six units are devoted to the preparation and production of a written project.

- MUSC 224 - Supervised Graduate Study 1-2 unit(s) (2 units in each of three semesters)
- Written Culminating Exam 0 unit(s)

Written Culminating Exam (WCE)

At the end of their studies, all Music, MM students must demonstrate their thorough grasp of their field of specialization, music history, and music theory through the Written Culminating Exams (WCE). Students must pass all sections of the examination to be awarded their master's degrees. The examination consists of three essay questions, which will concern subjects in:

- the student's major field (piano, composition, etc.);
- the information covered in the student's MUSC 201 history class; and,
- the information covered in the student's MUSC 202 theory class.

The essay questions will be written by the major instructor and by the professors who taught the student MUSC 201 and MUSC 202. The examination will be given in the middle of the semester. If students are enrolled in MUSC 201 and/or MUSC 202 during their last semester, the essay question(s) will cover the material covered in class to that date. Students have two weeks to complete the examination, which is open book. Students are required to research their topics but cannot work with other students or any other persons on their examination. Each essay must represent only the student's work, and students must sign a declaration on the cover sheet that the essays represent only their own research and writing. Each essay must be 4-6 pages in length, typed, and double-spaced. Footnotes must be used in the correct format to identify all sources. Failure to demonstrate knowledge of correct bibliographic citation will result in a failure in the examination. Students will be notified **two weeks after the examinations** are turned in if they have passed or failed. If the student fails, the examination may be retaken one time upon consultation with the Graduate Advisor. The examinations will be filed in the student's School file.

It is the student's responsibility to inform the Graduate Advisor at the beginning of his or her last semester that he or she needs to take the WCE that semester. The Graduate Advisor will ask for the names of the three professors who will be writing the examination questions, and will assign the dates for the examination. The Graduate Advisor will request the essay questions from your professors and give you the examination on the appointed date.

Total Units Required (30 units)

Elective courses must be planned in consultation with the Area Coordinator and the School of Music Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and an SJSU Cumulative grade point average of 3.0 in order to graduate.

Philosophy, MA

- Requirements for Admission to Classified Standing
- Admission to Conditionally Classified Standing
- Requirements for Advancement to Candidacy for the MA - Philosophy
- Completing Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The MA Philosophy program is offered by the Department of Philosophy.

Advisors: Dr. Carlos A. Sanchez

Requirements for Admission to Classified Standing

Candidates must meet all university requirements for admission. In addition, a student will be admitted to classified status only if:

- At least 18 units in philosophy have been taken including at least 6 units in upper-division work, at least 6 units in the history of philosophy, at least 3 units in ethics, and at least 3 units of symbolic logic (Phil 9 or its equivalent). Exceptions based on comparable studies and experience may be made with graduate committee approval.
- The average grade received in the 18 units is at least a "B".
- Three letters of recommendation have been submitted.

Admission to Conditionally Classified Standing

Applicants who meet the requirements for admission to the Graduate Division but who do not meet all the requirements for classified standing will be admitted as conditionally classified.

Requirements for Advancement to Candidacy for the MA - Philosophy

The basic requirements for advancement to candidacy for the MA Philosophy are outlined in detail in the Academic Requirements section. The University requires that all graduate students satisfy the Graduation Writing Assessment

Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Completing Requirements

Plan A - Thesis

Designed for students who wish to do a thesis.

Plan B - Option 1: Reading Intensive

Designed for students who wish to do a guided, individualized reading project.

Plan B - Option 2: Applied Philosophy Project

Designed for students who wish to do a project.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core Courses (15 units)

- PHIL 289 - Graduate Proseminar 3 *unit(s)*
- PHIL 290 - Advanced Seminar in a Selected Philosopher or Tradition 3 *unit(s)* (GWAR)
- PHIL 291 - Advanced Seminar in Epistemology and Metaphysics 3 *unit(s)* (GWAR)
- PHIL 292 - Advanced Seminar in Ethics or Aesthetics 3 *unit(s)*

Complete One Course From:

- PHIL 157 - Intermediate Logic & Language Analysis 3 *unit(s)*
- PHIL 293 - Advanced Seminar in Logical Theory 3 *unit(s)*

Elective Courses (12 units)

One or more of 290, 291, 292, and 293 may be repeated as electives when the course content is different

- 100- or 200-level courses within the department

Culminating Experience (3 units)

Comprehensive Exam

Taken after most of the core and elective courses are completed

Choose One Plan

Plan A: Thesis (3 units)

- PHIL 299 - Master's Thesis *3 unit(s)*

Plan B- Option 1: Reading Intensive (3 units)

- PHIL 298 - Special Studies *1-3 unit(s)*

Plan B- Option 2: Applied Philosophy Project (3 units)

- PHIL 298 - Special Studies *1-3 unit(s) (3 units required)*

Total Units Required (30 units)

Spanish, MA

- Admissions Requirements
- Advancement to Candidacy
- Program Requirements
- Master's Requirements (32 units)
- Program Learning Outcomes

The Master of Arts Degree in Spanish offers students the opportunity to pursue studies in Hispanic literature, linguistics, and culture. The program prepares students for doctoral studies and for careers in the teaching of Spanish, bilingual education, international business, social and governmental services, and other related areas.

More information can be found on the Department of World Languages and Literatures website: www.sjsu.edu/wll.

Admissions Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MA, Spanish degree program. See the GAPE Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English Language Proficiency Exam (ELP) score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Admission to Classified Standing

Minimum requirements for admission to the Graduate Division are outlined in this catalog. In order to be admitted to classified standing in the MA program in Spanish, students should possess the following:

- A bachelor's degree (or its equivalent, as assessed by the department), with a major in Spanish, and including at least 16 units of upper-division work in the major with a grade of "B" or better.
- Evidence of college-level proficiency in Spanish.

Requirements for Admission to Conditionally Classified Standing

A student may be admitted to conditionally classified standing if he or she meets minimum requirements for admission to the Graduate Division but does not fully meet requirements for Classified admission to the MA, Spanish program. The individual admission notification will explain the required terms and conditions for attaining Classified standing.

Requirements for Advancement to Candidacy

Advancement to candidacy requires favorable action by both the departmental graduate committee and the university graduate committee. All applicants meet institutional requirements as set forth in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Graduation Writing Assessment Requirement

Students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Each candidate for the master's degree must successfully complete a final comprehensive written examination.

Program Requirements

The minimum program for a Master of Arts in Spanish degree includes the following:

- The 32 unit program for a Master of Spanish requires at least 20 semester units of 200-level courses. Included in these 32 units, students must take FORL 200W, which satisfies the Graduation Writing Assessment Requirement (GWAR).
- Up to 12 units of approved upper-division (100-level) courses not used to meet a requirement for the BA degree in Spanish at San José State University may be taken in the Graduate Division to complete the minimum 32-unit program.
- Final comprehensive examination conducted in Spanish.
- Demonstration of competence in written English.

Master's Requirements (32 units)

Required Courses (20 units)

- FORL 200W - Graduate Research & Writing 4 *unit(s)* (GWAR)

Complete 16 units:

- SPAN 201 - Modern Spanish 4 *unit(s)*
- SPAN 202 - Seminar in Hispanic Civilization and Culture 4 *unit(s)*
- SPAN 210 - Old Spanish 4 *unit(s)*
- SPAN 220 - Historical Spanish Linguistics 4 *unit(s)*
- SPAN 225 - Spanish Dialectology 4 *unit(s)*
- SPAN 250 - Seminar in the Siglo de Oro 4 *unit(s)*
- SPAN 260A - Hispanic Culture 4 *unit(s)*
- SPAN 260B - Hispanic Linguistics 4 *unit(s)*
- SPAN 260C - Hispanic Literature 4 *unit(s)*
- SPAN 270 - Seminar in Contemporary Literature of Spain and Spanish America 4 *unit(s)*
- SPAN 280 - Seminar in Romanticism in Spain and Spanish America 4 *unit(s)*
- SPAN 298 - Special Study 1-6 *unit(s)*

Electives (12 units)

A maximum of 12 units may be taken from the following:

Elective courses must be planned in consultation with the Graduate Advisor.

- SPAN 111 - Advanced Spanish Conversation 4 *unit(s)*
- SPAN 120A - Spanish Literature I 4 *unit(s)*
- SPAN 120B - Spanish Literature II 4 *unit(s)*
- SPAN 132 - Special Topics in Spanish for Careers 4 *unit(s)*
- SPAN 140A - Spanish American Literature 4 *unit(s)*
- SPAN 140B - Spanish American Literature II 4 *unit(s)*
- SPAN 160A - Hispanic Culture 4 *unit(s)*
- SPAN 160B - Hispanic Linguistics 4 *unit(s)*
- SPAN 160C - Hispanic Literature 4 *unit(s)*
- SPAN 170 - Spanish Translation: Theory and Practice 4 *unit(s)*

Culminating Experience

Plan B (Comprehensive Exam)

Written Comprehensive Examination

Total Units Required (32 units)

Elective courses must be planned in consultation with the Graduate Advisor. Undergraduate courses required as prerequisites do not count towards the MA degree.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 12.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Teaching English to Speakers of Other Languages (TESOL), MA (Not Accepting Students)

- Requirements for Admission to Conditionally Classified Standing
- Requirements for Admission to Classified Standing
- Advancement to Candidacy
- Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The MA TESOL prepares students to assess and systematically build the listening, speaking, reading and writing skills of students from other language backgrounds who wish to learn English or to improve their skills in English. The Department of Linguistics and Language Development (LLD) strikes a balance between theory and practice. Students in the department are part of an ethnically and linguistically diverse student body, taught by nationally and internationally recognized faculty. Graduates from the MA TESOL program staff many of the area's English as a Second Language programs at the university, community college, adult school, and private program level. In addition, a number of TESOL graduates have chosen careers in international settings, teaching English as a Foreign Language in universities, schools, and companies in Asia, Latin America, Europe, and other regions. MA TESOL graduates are also eligible to teach abroad through the U.S. government-sponsored Fulbright and English Language Fellow programs. Any undergraduate major is appropriate preparation for this degree. (Note that the department does not have a credentialing program.)

Requirements for the MA TESOL include those established by the department. For information concerning university requirements, see the Academic Requirements section of this catalog.

Requirements for Admission to Conditionally Classified Standing

Students holding an accredited baccalaureate degree and who otherwise satisfy the graduate level admissions requirements of San José State University (in the case of students with baccalaureate degrees from a university where English is not the principal language of instruction the minimum score of 577, computer score of 233, or Internet-based score of 90 on the TOEFL or 7.0 on IELTS) are eligible for admission as conditionally classified students. Students must have a grade point average of at least 3.0 in the last 60 semester (90 quarter) units.

Requirements for Admission to Classified Standing

In addition to the above requirements for conditionally classified standing, students in the MA TESOL program are eligible for admission as classified graduate students if they have completed two prerequisites, equivalent to LING 101 - Introduction to Linguistics and LING 107 - Patterns of English, which must each be completed with a grade of "B" or better.

Students admitted as conditionally classified may complete the requirements for classified standing after admission to the program; however, a "B" grade must be achieved in all prerequisite courses. Additionally, the granting of classified standing is subject to the coordinator's review of the conditionally classified student's work.

Advancement to Candidacy

The requirements for advancement to candidacy for the MA TESOL are those established by the university and the department. For information see the Graduate Policies and Procedures section of this catalog.

Graduation Requirements

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). In the MA TESOL, this is satisfied with the core course LLD 250W - Becoming a Professional in Linguistics/TESOL.

Culminating Experience

Plan A (with Thesis)

Completion of 30 units; approved thesis proposal and thesis. The thesis option allows a student to pursue research in an area of common interest to the student and a faculty member. A thesis proposal may grow out of a course or be developed in LLD 298 - Individual Study, and must be approved by the student's advisor and thesis committee members. For more information, visit the Thesis and Dissertation Information website.

Plan B (without Thesis)

Students are required to complete a total of 30 units (27 required; 3 electives); in addition, students must pass a comprehensive examination.

Master's Requirements (30 units)

Core Courses (27 units)

- LLD 250W - Becoming a Professional in Linguistics/TESOL 3 *unit(s)* (GWAR)
- LLD 260 - English Structures for Teaching I 3 *unit(s)*
- LLD 261 - English Structures for Teaching II 3 *unit(s)*
- LLD 270 - Second Language Acquisition 3 *unit(s)*
- LLD 271 - Intercultural Communication and Second Language Acquisition 3 *unit(s)*
- LLD 280 - Methods and Materials for Teaching English to Speakers of Other Languages 3 *unit(s)*
- LLD 282 - Practicum in Teaching English to Speakers of Other Languages 3 *unit(s)*
- LLD 283 - Curriculum and Assessment in TESOL 3 *unit(s)*
- LLD 293 - Teaching College-level Reading and Writing 3 *unit(s)*

Additional Courses (3 units)

Plan A (with Thesis) (3 units)

- LLD 299 - Master's Thesis 1-6 *unit(s)* (3 *units* required)

Plan B (without Thesis) (3 units)

- One Elective 3 *unit(s)*
- Comprehensive Exam 0 *unit(s)*

Elective Course (0-3 units)

- LING 111 - Introduction to Linguistic Phonetics 3 *unit(s)*
- LING 112 - Introduction to Syntax 3 *unit(s)*
- LING 113 - Introduction to Phonology 3 *unit(s)*
- LING 114 - Introduction to Semantics and Discourse 3 *unit(s)*
- LING 125 - Introduction to Historical and Comparative Linguistics 3 *unit(s)*
- LING 161 - Psycholinguistics 3 *unit(s)*
- LING 162 - Introduction to Morphology 3 *unit(s)*
- LING 166 - Sociolinguistics 3 *unit(s)*
- LING 201 - Phonology: Theory and Applications 3 *unit(s)*
- LING 202A - Syntactic Theory 3 *unit(s)*
- LING 203 - Semantic Structures 3 *unit(s)*
- LING 213 - Linguistic Field Methods 3 *unit(s)*
- Courses from other departments may be used as electives, with graduate advisor approval.

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Basic Certificate(s)

Computational Linguistics Certificate

The Certificate in Computational Linguistics, offered by the Department of Linguistics and Language Development, is an 18 unit program that provides a basic education and a certain amount of practical training in the interdisciplinary field of computational linguistics. It was designed to meet the needs of individuals who desire formal course preparation as language analysts in the environment of human language interfaces in software development. Please contact the computational linguistics coordinator for advising before beginning this certificate.

University Basic Certificate Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

To receive the Certificate in Computational Linguistics, students must complete the following 18 units of course work and fulfill the programming requirement:

Certificate Requirements (18 units)

- LING 101 - Introduction to Linguistics 3 *unit(s)*
- LING 115 - Corpus Linguistics 3 *unit(s)*
- LING 124 - Introduction to Speech Technology 3 *unit(s)*
- LING 165 - Introduction to Natural Language Processing 3 *unit(s)*

Electives (6 units)

- CS 123A - Bioinformatics I 3 *unit(s)*
- CS 123B - Bioinformatics II 3 *unit(s)*
- CS 154 - Formal Languages and Computability 3 *unit(s)*
- CS 156 - Introduction to Artificial Intelligence 3 *unit(s)*
- LING 111 - Introduction to Linguistic Phonetics 3 *unit(s)*
- LING 112 - Introduction to Syntax 3 *unit(s)*
- LING 113 - Introduction to Phonology 3 *unit(s)*
- LING 161 - Psycholinguistics 3 *unit(s)*
- LING 166 - Sociolinguistics 3 *unit(s)*
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- MATH 162 - Statistics for Bioinformatics 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)
- STAT 115 - Intermediate Statistics 3 *unit(s)*

Total Units Required (18 units)

Programming Requirement: Demonstrated competence with a programming language such as Java, C/C++, and Python. This requirement is to be satisfied by the time you complete the certificate program rather than before you begin the program. Students typically fulfill the requirement by submitting a final project in a course (e.g. LING 165) that involves a substantial amount of coding.

Any *matriculated upper division undergraduate or graduate student* may pursue this certificate. *Non-matriculated students* may take the courses through Open University. Students must maintain a 3.0 average in these courses to be awarded the certificate.

Prerequisites for Courses: CS and MATH courses above have prerequisites of their own, so the total number of units you must take for the certificate may vary depending on your choice of electives and your academic background.

Global Philosophical Traditions Certificate

The Certificate in Global Philosophical Traditions enables SJSU undergraduate students with diverse backgrounds to gain intermediate knowledge of the methods in comparative philosophy as well as to engage deeply with at least two world philosophies and one western philosophical tradition which broadens the analytic perspective of the Anglo-American philosophical canon. In doing so, they simultaneously acquire skills in cultural understanding which are increasingly valued on the global job market.

The Philosophy Undergraduate Advisor serves as supervisor for the certificate program and will review student programs of study to ensure that students take at least one 3-unit course to fulfill the comparative philosophical thinking and continental philosophy and pragmatism degree requirements, and two 3-unit courses to fulfill the world philosophies degree requirement.

University Basic Certificate Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

To receive the Certificate in Global Philosophical Traditions, students must complete the following twelve units of required coursework:

Certificate Requirements (12 units)

Comparative Philosophical Thinking (3 units)

- PHIL 120 - Comparative Philosophy Theory & Practice 3 *unit(s)*

World Philosophies (6 units)

Complete two courses from:

- PHIL 104 - Asian Philosophy 3 *unit(s)*
- PHIL 118 - Latin American Philosophy 3 *unit(s)*
- PHIL 119 - Africana Philosophy and Culture 3 *unit(s)*

Continental Philosophies & Pragmatism (3 units)

Complete one course from:

- PHIL 112 - American Philosophy 3 *unit(s)*
- PHIL 113 - Existentialism and Phenomenology 3 *unit(s)*
- PHIL 121 - Philosophy and Feminism 3 *unit(s)*

Total Units Required (12 units)

All of SJSU's matriculated student population will be eligible for this certificate. Students who are interested in completing, are currently completing or have completed the requirements for the certificate will meet with the

Undergraduate Advisor to verify their satisfactory completion. The Undergraduate Advisor will also help students complete the SJSU's Basic Undergraduate Certificate Form, and will forward a copy of it to the Office of the Registrar.

Professional and Technical Writing Certificate

The Department of English and Comparative Literature offers a 16-unit program consisting of a twelve-unit core (ENGL 106, ENGL 107, ENGL 129) and four units of an advisor-approved elective. This program is designed for those seeking greater specialization, including post-baccalaureate students who hold or seek employment in technical or professional writing. Prerequisite: Graduate standing.

University Basic Certificate Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (16 units)

Core Courses (12 units)

- ENGL 106 - Professional and Technical Editing *4 unit(s)*
- ENGL 107 - Professional and Technical Writing *4 unit(s)*
- ENGL 129 - Writing for Professional Publications *4 unit(s)*

Electives (4 units)

Complete one course from:

- ENGL 103 - Modern English *4 unit(s)*
- ENGL 105 - Seminar in Advanced Composition *4 unit(s)*
- ENGL 110 - UX Design and Visual Communication *4 unit(s)*

Total Units Required (16 units)

Translation and Interpretation Certificate

This basic certificate offers undergraduate students a general overview and understanding of the Translation and Interpretation profession using a practical approach where students' translation and interpretation skills will be developed. The eligible languages for this program are Spanish, French, Japanese, and Chinese. Students will learn the theory, practice, culture and ethics of this discipline in different fields (law, health, business, hospitality etc.) while

gaining civic responsibility by participating in issues related to the local community and learning how to have a positive impact on society. The Translation and Interpretation Certificate is offered by the Department of World Languages and Literatures.

Basic Certificates University Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Prerequisites (8 units)

The two intermediate courses should be in the same language:

Spanish

- SPAN 25A - Intermediate Spanish 4 *unit(s)* (C2)
- SPAN 25B - Intermediate Spanish 4 *unit(s)* (C2)

French

- FREN 25A - Intermediate French: Reading 4 *unit(s)* (C2)
- FREN 25B - Intermediate French: Writing 4 *unit(s)* (C2)

Japanese

- JPN 25A - Intermediate Japanese 4 *unit(s)* (C2)
- JPN 25B - Intermediate Japanese 4 *unit(s)* (C2)

Chinese

- CHIN 25A - Intermediate Chinese 4 *unit(s)*
- CHIN 25B - Intermediate Chinese 4 *unit(s)*

Certificate Requirements (16 units)

Complete four courses in one language:

Spanish

- SPAN 101A - Advanced Spanish 4 *unit(s)*
- SPAN 101B - Advanced Spanish 4 *unit(s)*
- SPAN 132 - Special Topics in Spanish for Careers 4 *unit(s)*
- SPAN 170 - Spanish Translation: Theory and Practice 4 *unit(s)*

French

- FREN 101A - Advanced French: Reading and Writing 4 *unit(s)*
- FREN 101B - Advanced French: Written Communication 4 *unit(s)*
- FREN 132 - Special Topics in French for Careers 4 *unit(s)*
- FREN 170 - Translation and Comparative Stylistics 4 *unit(s)*

Japanese

- JPN 101A - Advanced Japanese 4 *unit(s)*
- JPN 101B - Advanced Japanese 4 *unit(s)*
- JPN 105 - Media Japanese 4 *unit(s)* or JPN 107 - Japanese for Business Professionals 3 *unit(s)*
- JPN 120 - Japanese Literature and Translation 4 *unit(s)*

Chinese

- CHIN 101A - Advanced Chinese 4 *unit(s)*
- CHIN 101B - Advanced Chinese 4 *unit(s)*
- CHIN 132 - Special Topics in Chinese for Careers 4 *unit(s)*
- CHIN 110 - Structure of the Chinese Language 4 *unit(s)*

Total Units Required (16 units)

Undergraduate TESOL Certificate

The undergraduate certificate in TESOL, offered by the Department of Linguistics and Language Development, is for students who have not yet completed the BA. Students complete courses related to the structure of English and teaching of English to speakers of other languages. For students whose major is not linguistics, the TESOL certificate can be combined with the minor in linguistics.

University Basic Certificate Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

To receive the undergraduate Certificate in TESOL, students must complete the following eighteen units of required coursework:

Certificate Requirements (18 units)

Core Courses (12 units)

- LING 101 - Introduction to Linguistics 3 *unit(s)*
- LING 107 - Patterns of English 3 *unit(s)*
- LING 108 - Introduction to Second Language Development, Teaching, and Assessment 3 *unit(s)*
- LING 166 - Sociolinguistics 3 *unit(s)*

Electives (6 units)

Choose two courses with the approval of the TESOL Coordinator

Total Units Required (18 units)

Any matriculated upper division student may pursue this certificate. Students must maintain a 3.0 average in these courses to be awarded the certificate.

Advanced Certificate(s)

Ethics of Science and Emerging Technologies, Advanced Certificate

The Advanced Certificate in Ethics of Science and Emerging Technologies (CESET) enables matriculated SJSU students and industry professionals (via Open University) to gain advanced knowledge of the goals and methods of scientific inquiry and ethical decision-making, and then apply this knowledge to pressing contemporary social issues. By engaging with ethical theory, philosophy of science, epistemology and applied philosophy and ethics, students will acquire practical skills which are increasingly valued on the global job market and can help them advance their career.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

To receive the advanced Certificate in the Ethics of Science and Emerging Technologies, students must complete the following twelve units of required coursework:

Certificate Requirements (12 units)

Philosophy of Science (3 units)

- PHIL 160 - Philosophy of Science 3 *unit(s)*

Ethical Theory (3 units)

- PHIL 132 - Ethical Theory 3 *unit(s)*

Applied Philosophy and Ethics (3 units)

Complete one from:

- PHIL 110 - Science, Technology and Human Values 3 *unit(s)*
- PHIL 111 - Medical Ethics 3 *unit(s)*
- PHIL 117 - Philosophy of Race 3 *unit(s)*
- PHIL 126 - Environmental Ethics and Philosophy 3 *unit(s)*
- PHIL 133 - Ethics in Science 3 *unit(s)*
- PHIL 134 - Computers, Ethics and Society 3 *unit(s)*
- PHIL 159 - Philosophy of Mind 3 *unit(s)*

Advanced Ethics or Epistemology (3 units)

In consultation with a graduate program co-director, choose one of the following:

- PHIL 291 - Advanced Seminar in Epistemology and Metaphysics 3 *unit(s)*
- PHIL 292 - Advanced Seminar in Ethics or Aesthetics 3 *unit(s)*

Total Units Required (12 units)

Graduate TESOL Certificate (Not accepting students)

The graduate certificate in TESOL, offered by the Department of Linguistics and Language Development, is designed to meet the needs of individuals desiring formal course preparation and training as classroom teachers of English to speakers of other languages but not requiring an MA degree. While the certificate is approved by the university, it does not provide certification, accreditation, or credentialing approved by the Commission on Teacher Credentialing. Students must maintain a 3.0 average in these courses to be awarded the certificate.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (18 units)

Core Courses (18 units)

- LING 101 - Introduction to Linguistics 3 *unit(s)*
- LING 107 - Patterns of English 3 *unit(s)*
- LLD 270 - Second Language Acquisition 3 *unit(s)*
- LLD 271 - Intercultural Communication and Second Language Acquisition 3 *unit(s)*
- LLD 280 - Methods and Materials for Teaching English to Speakers of Other Languages 3 *unit(s)*
- LLD 283 - Curriculum and Assessment in TESOL 3 *unit(s)*

Total Units Required (18 units)

Any matriculated graduate student may pursue this certificate. Non-matriculated post-graduate students may take the courses through Extended Studies Open University. Students must maintain a 3.0 average in these courses to be awarded the certificate.

Philosophy Post-baccalaureate Certificate

The Philosophy Post-baccalaureate Certificate enables postgraduate students with diverse backgrounds to gain intermediate knowledge of at least one philosophical sub-discipline. It also leads them to strengthen their skills in analytical and critical writing, ethical decision-making, pedagogy, and research literacy. By doing so, it complements students' prior studies and prepares them for professional positions, which require strong analytical and ethical skills (e.g., policy analyst, ethical counselor, community college teacher or speechwriter).

Additionally, this program also allows students time to carefully consider pursuing a Philosophy MA degree through the completion of advanced coursework and meetings with philosophy faculty. We expect most students to complete the certificate over the course of two semesters. Students who wish to continue towards completion of the Philosophy master's degree should transfer into the program before their third semester. Students who require a third semester to complete the certificate should contact the Philosophy Graduate Program Co-Directors for more information.

The Philosophy Graduate Program Co-Directors serve as advisors for the certificate program and will review all student programs of study to ensure that students take at least one 3-unit course to fulfill each program requirement (Analytical and Critical Writing, Pedagogy and Research Literacy, Intermediate Philosophical Knowledge of a Philosophical Subdiscipline and Ethical Decision-Making).

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

To receive the Post-baccalaureate Certificate in Philosophy, students must complete the following twelve units of required coursework:

Certificate Requirements (12 units)

Analytical and Critical Writing (3 units)

- PHIL 290 - Advanced Seminar in a Selected Philosopher or Tradition *3 unit(s)*

Pedagogy and Research Literacy (3 units)

- PHIL 289 - Graduate Proseminar *3 unit(s)*

Ethical Decision-Making (3 units)

- PHIL 132 - Ethical Theory *3 unit(s)*

Intermediate Philosophical Knowledge of a Philosophical Subdiscipline (3 units)

In consultation with a graduate program co-director, choose one of the following upper decision or graduate level methods courses:

- PHIL 106 - Philosophy of Art *3 unit(s)*
- PHIL 107 - Philosophy and Literature *3 unit(s)*
- PHIL 108 - Political and Social Philosophy *3 unit(s)*
- PHIL 109 - Philosophy of Religion *3 unit(s)*
- PHIL 111 - Medical Ethics *3 unit(s)*
- PHIL 112 - American Philosophy *3 unit(s)*
- PHIL 113 - Existentialism and Phenomenology *3 unit(s)*
- PHIL 117 - Philosophy of Race *3 unit(s)*
- PHIL 118 - Latin American Philosophy *3 unit(s)*
- PHIL 119 - Africana Philosophy and Culture *3 unit(s)*
- PHIL 120 - Comparative Philosophy Theory & Practice *3 unit(s)*
- PHIL 121 - Philosophy and Feminism *3 unit(s)*
- PHIL 122 - Social Justice *3 unit(s)*
- PHIL 126 - Environmental Ethics and Philosophy *3 unit(s)*
- PHIL 149 - Metaphysics & Epistemology *3 unit(s)*
- PHIL 157 - Intermediate Logic & Language Analysis *3 unit(s)*
- PHIL 158 - Philosophy of Language *3 unit(s)*
- PHIL 159 - Philosophy of Mind *3 unit(s)*

Total Units Required (12 units)

Spartan Accelerated Graduate Education (SAGE) Scholars

Spartan Accelerated Graduate Education (SAGE) Programs programs are combined bachelor's and master's programs at SJSU (per University Policy F19-1). Sometimes they may also satisfy the requirements for a credential. Students in these programs pursue a bachelor's and master's degree simultaneously. These program allow students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

Art, Preparation for Teaching, BA + Single Subject Credential in Art + Teaching, MAT

- Admissions Requirements
- Graduate Standing Requirements
- Program Requirements (152 units)
- Advising Roadmap

This Spartan Accelerated Graduate Education (SAGE) Scholars Program allows qualified students in Art, Studio Practice Concentration (Preparation for Teaching), BA to simultaneously complete the requirements for the Baccalaureate, Single Subject Credential - Art and Teaching, MAT degrees (with optional Spanish bilingual authorization). Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee. They complete all degrees in less time as compared to completing them separately. The program provides a broad foundation in contemporary art practice and permits some specialization in a favorite art medium. It also specializes in courses on teaching art to young people. Graduates most often work in middle and high school classrooms.

To add a Spanish Bilingual Authorization to this pathway, students simultaneously apply to the Critical Bilingual Authorization program (CBAP). This requires an additional personal essay in their SAGE Scholars application and an interview in Spanish. CBAP students take one credential course in Spanish (EDTE 208B instead of EDTE 208) and take specified sections of several other credential courses. They do their student teaching in bilingual classrooms and are required to register for 2 seminars of EDTE 297B - Advanced Issues in Bilingual Education (2 units) during their student teaching semesters, for an additional 4 units.

Total SAGE Program Units (BA + Credential + MAT) 152

For more information, contact the **Program Coordinator**: Erica Colmenares.

Admissions Requirements

Most native and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during the Spring semester of Year 3. Applications will be processed by the Department of Teacher Education and without an application fee. Students will not need to apply formally for graduate admission if accepted into this program.

- Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program;
- Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (GWAR) prior to admission into the program;
- Students must have a minimum 2.75 cumulative GPA at the time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher Note that this is a higher GPA standard than other SAGE Scholars programs; and,
- Students must meet the Teaching, MAT and Single Subject Credential admissions requirements.

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Continuation requirements: SAGE Scholars must meet the same requirements to remain in the undergraduate and graduate programs as students in traditional pathways. Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Successfully complete 9 units of graduate coursework in the Secondary Education program;
- Maintain GPA of 3.0 or higher;
- Demonstrate aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments;
- Meet with a graduate advisor to plan a formal course of study. The MAT degree approved programs are individually designed to meet specific student objectives;
- To enter student teaching, students must have completed the Subject Matter Competency requirements (CSETs or Subject Matter Competency waiver, if applicable);
- To convert to graduate status, students must have completed their 45 hours of pre-professional service in a public school setting: 25(+) in the secondary subject area and up to 20 hours any work with youth;
- To convert to graduate status, students must have completed all *lower-division* work (including lower and upper-division general education courses and American Institutions courses); and,
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Area C1 and SJSU Studies Area S. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Graduation requirements: SAGE Scholars must meet the same undergraduate graduation requirements as Art, Preparation for Teaching majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE Scholars must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (152 units)

Art, Studio Practice Concentration (Preparation for Teaching), BA (105 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (41 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass the 100W course with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B, C2, D/American Institutions (US123), E, F, R, V 39 *unit(s)*
- Physical Education 2 *unit(s)*

Major Preparation (27 units)

- ART 12 - Two-Dimensional Design and Color Concepts 3 *unit(s)*
- ART 13 - Three-Dimensional Design Concepts 3 *unit(s)*
- ART 24 - Drawing I 3 *unit(s)*
- ART 68 - Beginning Sculpture: Object & Concept 3 *unit(s)*
- ART 74 - Introduction to Digital Media 3 *unit(s)*
- PHOT 40 - Beginning Photography 3 *unit(s)*
- ARTH 70B - Art History, Renaissance to Modern or ARTH 70A - Art History, Prehistoric to Medieval or ARTH 70C - Arts of Asia 3 *unit(s)* (C1)
- ARTH 101 - Introduction to Practice of Art History or PHIL 66 - Introduction to Aesthetics (C1) or PHIL 106 - Philosophy of Art 3 *unit(s)*
- Specialized Art History 3 *unit(s)*

Major Requirements (37 units)

- ART 1 - Professional Preparation in Art 1 *unit(s)*
- ART 2 - The Artist in Contemporary Culture 3 *unit(s)*
- ART 3 - Medium and Message 3 *unit(s)*
- ART 61 - Beginning Painting 3 *unit(s)*
- ART 100W - Writing Workshop: Fine Arts 3 *unit(s)* (WID)
- ART 138 - Elementary Art Methods 3 *unit(s)* (Teaching Fundamentals)
- ART 139 - Teaching Diversity through Art 3 *unit(s)* (Teaching Fundamentals)
- ARTH 193A - Worlds of Art and Culture or ARTH 193B - East Meets West in Art 3 *unit(s)*
- Capstone: ARED 150 - Field Experience in the Arts 3 *unit(s)*
- Area Focus 9 *unit(s)*
- LSTP 139 - Education and (In)Equality 3 *unit(s)* (S) (Substituted for EDTE 208) (Teacher Preparation)

Teaching, MAT + Single Subject Credential in Art (47 units)

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)* (6 *units* required)
- ARED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)* (4 *units* required)
- ARED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)* (4 *units* required)
- ARED 238 - Principles of Art Education 3 *unit(s)*
- ARED 365 - Field Experience Seminar in Art Education 1 *unit(s)*
- EDTE 208 - Educational Sociology 3 *unit(s)*
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 250 - Qualitative Research in Education 3 *unit(s)* (Research Core) (GWAR)
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- EDTE 297C - CalTPA Support 1 *unit(s)*

Culminating Experience (6 units)

Students must satisfy the culminating experience requirement by completing Plan A (Thesis) or Plan B (Project), and a **presentation on the same at the department's colloquium**, which is held near the end of each fall and spring semester.

Plan A (Thesis): Write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. Thesis proposals must be approved by the graduate committee, which is made up of two department faculty and a third faculty member from outside the department. Students enroll in:

- EDTE 299 - Master's Thesis

Plan B (Project): Complete a master's project report. A project is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized in a report that includes the project's significance, objectives, methodology and a conclusion or recommendation. Students enroll in:

- EDTE 298 - Special Studies in Education

Total Units Required (152 units)

Liberal Studies, Preparation for Teaching, BA + Education Specialist Credential + Special Education MA

This Spartan Accelerated Graduate Education (SAGE) Scholars Program allows students in Liberal Studies, Preparation for Teaching, BA to simultaneously complete the requirements for the Education Specialist Credential (Mild/Moderate Support Needs or Extensive Support Needs) and Special Education, MA. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee. They complete all degrees in less time as compared to completing them separately. Graduates of this program develop the knowledge and skills necessary to creatively meet the learning needs of students from Kindergarten through age 22 who have disabilities requiring mild, moderate, or extensive support. They most often work in school and/or residential settings.

Total SAGE Program Units (BA + Credential + MA) 155

For more information, contact the **Program Coordinator**: Dr. Erica Colmenares.

Admissions Requirements

Most native and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during the Spring semester of Year 3. To be eligible:

- Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program admission;
- Students must have completed the undergraduate Graduation Writing Assessment Requirement (GWAR) prior to admission into the program;
- Students must have a minimum 2.75 cumulative GPA at time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher. Note that this is a higher GPA standard than other SAGE Scholars programs; and,
- Students must meet all Special Education, MA and Education Specialist Credential admissions requirements. Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their

baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Continuation requirements: SAGE Scholars must meet the same requirements to remain in the undergraduate and graduate programs as students in traditional pathways. Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Complete successfully 9 units of graduate coursework in the Special Education program;
- Maintain GPA of 3.0 or higher;
- Demonstrate aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments;
- Meet with a graduate advisor to plan a formal course of study. The MA degree-approved programs are individually designed to meet specific student objectives;
- To enter student teaching, students must have completed the Elementary Subject Matter requirements (CSETs or ESM waiver requirements);
- To convert to graduate status, students must have completed their 45 hours of pre-professional service;
- To convert to graduate status, students must have completed all lower-division (including lower-division general education courses and American Institutions courses) and SJSU Studies requirements; and,
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: American Institutions and GE Areas A2, A3, B, C, D and E and SJSU Studies (R,S and V). Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Graduation Requirements: SAGE Scholars must meet the same undergraduate graduation requirements as all Liberal Studies Teacher Preparation majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE Scholars students must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved an SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (155 units)

Liberal Studies, Preparation for Teaching, BA (107 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Field Study Courses with Pre-Professional Experience: 45 hours included in LSTP 185, and 10 hours included in each LSTP 85A/LSTP 85B/LSTP 85C course.

University Requirements (14 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass HUM 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, one D course, and F 9 *unit(s)*

- GE Area C1 (Recommend: AMS 12 - Intro to US Popular Culture: Serious Fun!) 3 *unit(s)*
- Physical Education 2 *unit(s)*

Major Requirements (93 units)

Lower Division Requirements (33 units)

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- BIOL 21 - Human Biology **OR** ENVS 10 - Life on a Changing Planet 3 *unit(s)* (B2)
- CHAD 60 - Child Development **OR** CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1/B3)
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3)
- LSTP 10 - Chronicles of Education 3 *unit(s)* (C2)
- LSTP 85A - Fieldwork in Humanities A 1 *unit(s)*
- LSTP 85B - Fieldwork in Humanities B 1 *unit(s)*
- LSTP 85C - Fieldwork in Humanities C 1 *unit(s)*
- MATH 12 - Number Systems 3 *unit(s)* (B4)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1+B3)

Upper Division Requirements (60 units)

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*
- CHAD 149 - Child Health and Activity 3 *unit(s)*
- ENGL 112A - Children's Literature 3 *unit(s)*
- ENVS 158 - Environmental Education 3 *unit(s)*
- GEOL 103 - Earth Systems and the Environment 3 *unit(s)* (R)
- LING 107 - Patterns of English 3 *unit(s)*
- LSTP 139 - Education and (In)Equality 3 *unit(s)* (S)
- LSTP 185 - Field Experience in Humanities 3 *unit(s)*
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 106 - Intuitive Geometry 3 *unit(s)*
- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)* (S)
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)
- Art Disciplines 6 *unit(s)*
- Area of Specialization 9 *unit(s)* (at least 3 units must be upper division)
- Capstone: HUM 190 - Senior Seminar in Humanities 3 *unit(s)*
- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (WID)

Special Education, MA + Education Specialist Credential (48 units)

- EDEL 108D - Curriculum: Mathematics 3 *unit(s)* (3 units required)
- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S) (satisfies Area of Specialization for the Liberal Studies, Preparation for Teaching, BA)
- EDSE 192B - All Learners: An Introduction to Disabilities 1 *unit(s)*
- EDSE 192C - Inclusive Strategies for Educating Students with Disabilities 1 *unit(s)*
- EDSE 192D - Introduction to Special Education Policy and Law 1 *unit(s)*
- EDSE 215 - Assessing Students with Disabilities 3 *unit(s)*
- EDSE 216A - Literacy Instruction: Students with Disabilities 3 *unit(s)*

- **Option 1 - Mild/Moderate Support Needs** (9 units): EDSE 217A - Advanced Fieldwork in Mild Moderate Support Needs 6 *unit(s)* and EDSE 230A - Inclusive Pedagogy for Students with M/MSN 3 *unit(s)*

OR

- **Option 2 - Extensive Support Needs** (9 units): EDSE 154 - Advanced Fieldwork in ESN and ECSE 6 *unit(s)* and EDSE 213A - Methods for Students with Extensive Support Needs 3 *unit(s)*

- EDSE 218D - Teaching Students with Autism Spectrum Disorders 3 *unit(s)* (EDSE 218B also accepted)
- EDSE 224 - Methods for Emergent Bilinguals with Disabilities 1-3 *unit(s)* (3 *units required*)
- EDSE 228A - Topics in Collaboration and Transition 3 *unit(s)*
- EDSE 234 - Early Field Experiences in Special Education 1-3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*
- EDSE 279 - Positive Behavior Support 3 *unit(s)*
- EDSE 285 - Intro to Action Research in Special Education 3 *unit(s)* (GWAR)

- **Plan B (Project):** EDSE 220 - Advanced Research Projects in Special Education 3 *unit(s)*
Students will complete a master's project or research paper. This a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. The final paper includes the significance, objectives, methodology and a conclusion or recommendation.

Total Units Required (155 units)

The following Education Specialist Credential Courses are shared with the Masters: EDSE 102, EDSE 215, EDSE 218D (or EDSE 218B), EDSE 224, EDSE 228A, EDSE 230A or EDSE 213A, EDSE 241, and EDSE 279.

The Liberal Studies, Preparation for Teaching, BA requires the completion of CHAD 135. Students satisfy this course in this SAGE Scholars Program by completing EDSE 216A. Students must complete a minimum of 120 units to satisfy the bachelor's degree and a minimum of 30 units to satisfy the master's degree. In order to satisfy these requirements, 10 units of the credential count towards the bachelor's degree and remaining units of the credential count towards the master's degree.

Liberal Studies, Preparation for Teaching, BA + Multiple Subject Credential + Teaching, Critical Bilingual Education (Spanish) Concentration MAT

This Spartan Accelerated Graduate Education (SAGE) Scholars Program allows Liberal Studies, Preparation for Teaching, BA students to be concurrently enrolled in the Multiple Subject Credential and Teaching, Critical Bilingual Education (Spanish) Concentration, MAT graduate programs as an undergraduate.

There are numerous benefits to this combined pathway. First and foremost, early exposure to graduate courses productively enhances and integrates students' professional development. Undergraduates will be allowed to enroll in educational theory and practice courses during the years when they are developing competency in the subjects taught in K-8 classrooms. A combined pathway of theory, practice, and K-8 subject matter allows students to integrate these three legs of teaching early and often, and gives them ample time to assimilate the linkages prior to when they are required to demonstrate understanding and skills in all three areas - student teaching.

Critical Bilingual Education (Spanish) Concentration requirements include 3 of the teacher credential courses (EDEL 108A, EDTE 208B, and EDTE 262B) will be taught in Spanish, and student teaching (EDEL 143A/EDEL 143B) will be completed in Spanish bilingual classrooms. Students additionally complete two, 2-unit Spanish seminars (EDTE 297B) to support student teaching during the final year.

Total SAGE Program Units (BA + Credential + MAT) 155

For more information, contact the **Program Coordinator**: Dr. Erica Colmenares.

Admissions Requirements

Most native and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during the Spring semester of Year 3. To be eligible:

- Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program admission;
- Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (GWAR) prior to admission into the program. For Liberal Studies students, this means HUM 100W;
- Students must have a minimum 2.75 cumulative GPA at time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher. Note that this is a higher GPA standard than other SAGE Scholars programs; and,
- Students must meet all Teaching, MAT and Multiple Subject Credential admissions requirements.

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Continuation requirements: SAGE Scholars must meet the same requirements to remain in the undergraduate and graduate programs as students in traditional pathways. Requirements for program continuation in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BA is conferred, students meet every semester with their graduate advisor to plan a formal course of study;
- Maintain GPA of 3.0 or higher;
- Successfully completing 9 units of graduate coursework in the Elementary Education program;
- Demonstrating aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments;
- Passage of the CSET LOTE (subtest III) must occur prior to the second phase of student teaching; and
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MAT degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are waived or satisfied with required courses in the major: GE Areas A2, A3, B1, B2, B3, B4, C2, and E, SJSU Studies (R, S and V). Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Graduation requirements: SAGE Scholars must meet the same undergraduate graduation requirements as Liberal Studies, Preparation for Teaching majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE Scholars must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (155 units)

Liberal Studies, Preparation for Teaching, BA (104 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Field Study Courses with Pre-Professional Experience: 45 hours included in LSTP 185, and 10 hours included in each LSTP 85A/LSTP 85B/LSTP 85C course.

University Requirements (17 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass HUM 100W with a grade of "C" or better ("C-" not accepted).

GE Areas A1, an additional C1 or C2, two D/American Institutions (US123), and F 15 *unit(s)*

Physical Education 2 *unit(s)*

Major Requirements (87 units)

Lower Division Requirements (27 units)

- BIOL 21 - Human Biology 3 *unit(s)* OR ENVS 10 - Life on a Changing Planet 3 *unit(s)* (Both B2)
- CHAD 60 - Child Development 3 *unit(s)* OR CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (Both E)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3)
- LSTP 10 - Chronicles of Education 3 *unit(s)* (C2)
- LSTP 85A - Fieldwork in Humanities A 1 *unit(s)*
- LSTP 85B - Fieldwork in Humanities B 1 *unit(s)*
- LSTP 85C - Fieldwork in Humanities C 1 *unit(s)*
- MATH 12 - Number Systems 3 *unit(s)* (B4)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1+B3)

Upper Division Requirements (60 units)

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*
- CHAD 149 - Child Health and Activity 3 *unit(s)*
- ENGL 112A - Children's Literature 3 *unit(s)*
- ENVS 158 - Environmental Education 3 *unit(s)*
- GEOL 103 - Earth Systems and the Environment 3 *unit(s)* (R)
- LING 107 - Patterns of English 3 *unit(s)*
- LSTP 139 - Education and (In)Equality 3 *unit(s)*
- LSTP 185 - Field Experience in Humanities 3 *unit(s)*
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 106 - Intuitive Geometry 3 *unit(s)*
- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)* (S)
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)
- Art Disciplines 6 *unit(s)* (in two different art disciplines)
- Area of Specialization 9 *unit(s)* (at least 6 units must be upper division)
- Capstone: HUM 190 - Senior Seminar in Humanities 3 *unit(s)*

- HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (*WID*)

Teaching, Critical Bilingual Education (Spanish) Concentration, MAT + Multiple Subject Credential (51 units)

Upon completion of the MAT and credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in order to be recommended for a credential. Completion of the MAT also requires a minimum grade of "C" in all graduate courses taken and a minimum overall GPA of 3.0.

- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)*
- EDEL 108B - Curriculum: Science 3 *unit(s)*
- EDEL 108C - Curriculum: Social Studies 3 *unit(s)*
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)*
- EDEL 143A - Beginning Student-Teaching (Phase I) 1-6 *unit(s)* (4 units required)
- EDEL 143B - Advanced Student-Teaching (Phase II) 1-10 *unit(s)* (Students will take up to 10 units of EDEL 143B)
- EDTE 208B - Bilingual Educational Sociology 3 *unit(s)* (*GWAR*)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*
- EDTE 250B - Qualitative Research in Bilingual Education 3 *unit(s)* (*GWAR*)
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262B - Classroom Issues in the Language/Literacy Development of Emergent Bilinguals 3 *unit(s)* OR EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- EDTE 297B - Advanced Issues in Bilingual Education 1-3 *unit(s)* (Course should be taken for 1 unit twice.)
- EDTE 297C - CalTPA Support 1 *unit(s)* (Course should be taken twice.)

Culminating Experience (3 units)

Students must satisfy the culminating experience requirement by completing Plan A (Thesis) or Plan B (Project), and a **presentation on the same at the department's colloquium**, which is held near the end of each fall and spring semester.

Plan A (Thesis): Write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. Thesis proposals must be approved by the graduate committee, which is made up of two department faculty and a third faculty member from outside the department. Students enroll in:

- EDTE 299 - Master's Thesis 3 *unit(s)*

Plan B (Project): Complete a master's project report. A project is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized in a report that includes the project's significance, objectives, methodology and a conclusion or recommendation. Students enroll in:

- EDTE 298 - Special Studies in Education 3 *unit(s)*

Total Units Required (155 units)

The standalone Liberal Studies, Preparation for Teaching, BA requires the completion of CHAD 135. Students satisfy this requirement in this SAGE Scholars Program by completing EDTE 262B. Students must complete a minimum of 120 units to satisfy the bachelor's degree and a minimum of 30 units to satisfy the master's degree. In order to satisfy

these requirements, 16 units of the credential count towards the bachelor's degree and 24 units of the credential count towards the master's degree.

Liberal Studies, Preparation for Teaching, BA + Multiple Subject Credential + Teaching, MAT

This Spartan Accelerated Graduate Education (SAGE) Scholars Program allows students to be concurrently enrolled in the Multiple Subject Credential and Teaching, MAT graduate programs as an undergraduate.

There are numerous benefits to this combined pathway. First and foremost, early exposure to graduate courses productively enhances and integrates students' professional development. Undergraduates will be allowed to enroll in educational theory and practice courses during the years when they are developing competency in the subjects taught in K-8 classrooms. A combined pathway of theory, practice, and K-8 subject matter allows students to integrate these three legs of teaching early and often, and gives them ample time to assimilate the linkages prior to when they are required to demonstrate understanding and skills in all three areas - student teaching.

Total SAGE Program Units (BA + Credential + MAT) 155

For more information, contact the **Program Coordinator**: Dr. Erica Colmenares.

Admissions Requirements

Most native and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during the Spring semester of Year 3. To be eligible:

- Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program admission;
- Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (GWAR) prior to admission into the program. For Liberal Studies students, this means HUM 100W with a grade of "C" or better;
- Students must have a minimum 2.75 cumulative GPA at time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher. Note that this is a higher GPA standard than other SAGE Scholars programs; and,
- Students must meet all Teaching, MAT and Multiple Subject Credential admissions requirements.

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Continuation requirements: SAGE Scholars must meet the same requirements to remain in the undergraduate and graduate programs as students in traditional pathways. Requirements for program continuation in the graduate program, include:

- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BA is conferred, students meet every semester with their graduate advisor to plan a formal course of study;
- Maintain GPA of 3.0 or higher;
- Successfully completing 9 units of graduate coursework in the Elementary Education program;
- Demonstrating aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments; and

- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MAT degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are waived or satisfied with required courses in the major: GE Areas A2, A3, B1, B2, B3, B4, C2, and E, SJSU Studies (R, S and V). Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units.

Graduation requirements: SAGE Scholars must meet the same undergraduate graduation requirements as Liberal Studies, Preparation for Teaching majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE Scholars must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (155 units)

Liberal Studies, Preparation for Teaching, BA (104 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Field Study Courses with Pre-Professional Experience: 45 hours included in LSTP 185, and 10 hours included in each LSTP 85A/LSTP 85B/LSTP 85C course.

University Requirements (17 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass HUM 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, an additional C1 or C2, two D/American Institutions (US123), and F 15 *unit(s)*
- Physical Education 2 *unit(s)*

Major Requirements (87 units)

Lower Division Requirements (27 units)

- BIOL 21 - Human Biology 3 *unit(s)* or ENVS 10 - Life on a Changing Planet 3 *unit(s)* (B2)
- CHAD 60 - Child Development 3 *unit(s)* or CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1/3)
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3)
- LSTP 10 - Chronicles of Education 3 *unit(s)* (C2)
- LSTP 85A - Fieldwork in Humanities A 1 *unit(s)*
- LSTP 85B - Fieldwork in Humanities B 1 *unit(s)*
- LSTP 85C - Fieldwork in Humanities C 1 *unit(s)*
- MATH 12 - Number Systems 3 *unit(s)* (B4)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1/B3)

Upper Division Requirements (60 units)

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*

- CHAD 149 - Child Health and Activity 3 *unit(s)*
 - ENGL 112A - Children's Literature 3 *unit(s)*
 - ENVS 158 - Environmental Education 3 *unit(s)*
 - GEOL 103 - Earth Systems and the Environment 3 *unit(s)* (R)
 - LING 107 - Patterns of English 3 *unit(s)*
 - LSTP 139 - Education and (In)Equality 3 *unit(s)*
 - LSTP 185 - Field Experience in Humanities 3 *unit(s)*
 - MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
 - MATH 106 - Intuitive Geometry 3 *unit(s)*
 - SOCS 137 - California History for Teachers 3 *unit(s)*
 - SOCS 138 - US History for Teachers 3 *unit(s)* (S)
 - SOCS 139 - World History for Teachers 3 *unit(s)* (V)
 - Art Disciplines Area 6 *unit(s)* (in two different art disciplines)
 - Area of Specialization 9 *unit(s)* (at least 6 units must be upper division)
-
- Capstone: HUM 190 - Senior Seminar in Humanities 3 *unit(s)*
 - HUM 100W - Writing in the Humanities & Interdisciplinary Arts 3 *unit(s)* (WID)

Teaching, MAT + Multiple Subject Credential (51 units)

Upon completion of the MAT and credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in order to be recommended for a credential. Completion of the MAT also requires a minimum grade of "C" in all graduate courses taken and a minimum overall GPA of 3.0.

- EDEL 108A - Curriculum: Reading/Language Arts 3 *unit(s)* (3 units required)
- EDEL 108B - Curriculum: Science 3 *unit(s)* (3 units required)
- EDEL 108C - Curriculum: Social Studies 3 *unit(s)* (3 units required)
- EDEL 108D - Curriculum: Mathematics 3 *unit(s)* (3 units required)
- EDEL 143A - Beginning Student-Teaching (Phase I) 1-6 *unit(s)* (4 units required)
- EDEL 143B - Advanced Student-Teaching (Phase II) 1-10 *unit(s)* (Students will take up to 10 units of EDEL 143B)
- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)* (Multicultural Foundations)
- EDTE 250 - Qualitative Research in Education 3 *unit(s)* (Research Core) (GWAR)
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- EDTE 297C - CalTPA Support 1 *unit(s)* (Course should be taken twice.)
- EDTE 297F - Field Support 1 *unit(s)* (Course should be taken twice.)

Culminating Experience (3 units)

Students must satisfy the culminating experience requirement by completing Plan A (Thesis) or Plan B (Project), and a **presentation on the same at the department's colloquium**, which is held near the end of each fall and spring semester.

Plan A (Thesis): Write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. Thesis proposals must be approved by the graduate committee, which is made up of two department faculty and a third faculty member from outside the department. Students enroll in:

- EDTE 299 - Master's Thesis

Plan B (Project): Complete a master's project report. A project is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized in a report that includes the project's significance, objectives, methodology and a conclusion or recommendation. Students enroll in:

- EDTE 298 - Special Studies in Education

Total Units Required (155 units)

The standalone Liberal Studies, Preparation for Teaching, BA requires the completion of CHAD 135. Students satisfy this requirement in this SAGE Scholars Program by completing EDTE 262. The MAT shares EDTE 208 with the BA. Students must complete a minimum of 120 units to satisfy the bachelor's degree and a minimum of 30 units to satisfy the master's degree. In order to satisfy these requirements, 12 units of the credential count towards the bachelor's degree and 27 units of the credential count towards the master's degree.

SJSU Online

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. These upper division degree completion programs are offered through a special session that requires a separate application process. If interested, please contact one of our Enrollment Counselors for more information.

Public Relations, BS (SJSU Online)

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

The BS Public Relations, offered by the School of Journalism and Mass Communications, prepares students for the broad and exciting field of integrated strategic communication. Students learn how to promote an organization's brand through news outlets and social media influencers, how to create and implement marketing communication assets, and how to plan and execute public relations campaigns. The program includes courses in research, web analytics, strategic writing, content creation, event planning, social media, digital marketing, among other specialized courses in employee communications and sports public relations. Graduates work in agencies and corporations throughout the Silicon Valley, the United States, and worldwide in a wide variety of specializations from high tech to healthcare to sports and entertainment.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
SJSU Studies	9

Major Preparation	9
Major Requirements	39
University Electives	3
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units).
- All four CSU-approved Basics Skills courses must be completed with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
- GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.
- Completion of at least 9 units of the following courses (or equivalents) with a grade of "C-" or better:
 - MCOM 63 - New Media
 - MCOM 72 - Mass Communication and Society
 - JOUR 61 - Writing for Print, Electronic and Online Media

University Requirements (9 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with a major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (9 units)

- ADV 91 - Introduction to Advertising 3 *unit(s)*
- MCOM 100W - Writing Workshop: Mass Communications 3 *unit(s)* (WID)
- PR 99 - Introduction to Public Relations 3 *unit(s)*

Major Requirements (39 units)

- MCOM 101 - Media Law and Ethics 3 *unit(s)*
- MCOM 104 - Introduction to Mass Communications Research 3 *unit(s)*
- MCOM 111 - Mass Communications Internship 3 *unit(s)*
- PR 190 - Media and Influencer Relations 3 *unit(s)*
- PR 191 - Strategic Content Creation 3 *unit(s)*
- PR 192 - Case Studies in Strategic Communication 3 *unit(s)*
- PR 197 - Introduction to Corporate Internal Communication 3 *unit(s)*
- PR 199 - Campaign Planning and Management 3 *unit(s)*

Mass Communications Elective (3 units)

- MCOM 70 - Visual Communication for Modern Media 3 *unit(s)*
- MCOM 105 - Lifestyles, Diversity and the Media 3 *unit(s)*
- MCOM 106 - Global Mass Communication 3 *unit(s)*

Approved JMC Electives (12 units)

- Approved electives in the School of Journalism and Mass Communications (JMC), including courses in journalism, advertising, public relations or mass communications.

University Electives (3 units)

Total Units Required (120 units)

College of Information, Data & Society

Office: Student Union West

Telephone: 408-924-2670

Email: cpge@sjsu.edu

Website: www.sjsu.edu/cpge

Leadership:

Michael Meth, Interim Dean
Sandy Hirsh, Associate Dean Academics

Overview

The mission of the College of Information, Data & Society is to provide access to relevant educational programs that allow individuals to gain knowledge in a dynamic and innovative environment and become engaged, productive members of an evolving global society. We aspire to be a globally recognized College that shapes the future of the workforce, preparing students for professions that exist today and those that have yet to be created. Our college is the nexus for connecting professionals, institutions, businesses and industries, locally and from around the world, to the knowledge, resources, and talents of Silicon Valley's premier public university.

Academics

The College of Information, Data & Society offers interdisciplinary and forward-looking academic programs that prepare professionals to address the world's increasing challenges around analyzing, managing, protecting, securing, designing, organizing, and preserving data, information, records, and archives through technology-oriented and user-focused practices. The two academic units within the College of Information, Data & Society are the Department of Applied Data Science and the School of Information. Students have the opportunity to study full-time or part-time, learn in person or online, and pursue their education through a bachelor's degree, master's degrees, a credential program, and certificate programs.

This college offers the following programs:

- BS in Information Science and Data Analytics
- MS in Data Analytics
- MS in Informatics
- Master in Library and Information Science
- Master in Archives and Records Administration
- Teacher Librarian Credential
- Post Master's Certificate in Library and Information Science
- Advanced Certificate in Strategic Management of Digital Assets and Services

Undergraduate Major(s)

Information Science and Data Analytics, BS

The Bachelor of Science Information Science and Data Analytics (BS ISDA), offered by the School of Information, prepares students to work with data, technology, and people. BS ISDA majors attain skills that are applicable to a variety of careers involving analytics, visualization, big data, digital curation, digital assets management, knowledge management, information architecture, documents and records management, health care, education, and emerging technologies—all geared toward the information needs of users. Information Science and Data Analytics graduates are utilized by organizations to organize data and interpret the significance of data in a way that can be easily understood and used by others. They focus on what a person can do with an app rather than what an app does.

Program Delivery

The ISDA program is offered in two modes: as a 2-year, degree completion program through SJSU Online for students with 60 or more college credits, and as a 4-year degree program for freshman entering from high school or fewer than 60 credits. In the 2-year program through SJSU Online, all ISDA courses are online and delivered asynchronously via Canvas. In the 4-year program for entering freshman, courses are delivered both on-campus and online. In general, the program is completed as a hybrid program.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	53
Major Preparation	5
Major Requirements	48
University Electives	14
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below and General Education waivers. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Recommended: LLD 100WB - Writing Workshop for Business Students 3 *unit(s)*

Major Preparation (5 units)

Courses must be passed with a grade of C- or better.

- ISDA 20A - Query Languages 1 *unit(s)*
- ISDA 20B - Python Programming 2 *unit(s)*
- ISDA 20C - Web Development 1 *unit(s)*
- ISDA 20D - Computer Operating Systems 1 *unit(s)*

Major Requirements (48 units)

Core Courses (36 units)

All classes are infused with hands-on, real-world, collaborative projects to support students developing portfolios that demonstrate their knowledge and skills. Where necessary, students will have access to virtual labs such as INFOSEC, Amazon Web Services, Google Cloud Computing.

- ISDA 100 - Technical Writing for Information 3 *unit(s)*
- ISDA 101 - Online Learning: Tools and Strategies for Success 1 *unit(s)*
- ISDA 110 - Technology, Culture, and Society 3 *unit(s)*
- ISDA 111 - Information and Data Science 3 *unit(s)*
- ISDA 120 - Information Security 3 *unit(s)*
- ISDA 121 - Human Centered Cybersecurity 3 *unit(s)*
- ISDA 122 - Privacy, Security, Ethics 2 *unit(s)*
- ISDA 123 - Information Assurance 2 *unit(s)*
- ISDA 130 - User Centered Interface Architecture 3 *unit(s)*
- ISDA 131 - Information Architecture 3 *unit(s)*
- ISDA 140 - Big Data Analytics and Management 3 *unit(s)*
- ISDA 141 - Information Visualization 3 *unit(s)*
- ISDA 170 - The Emerging Future: Technology Issues and Trends 4 *unit(s)*

Major Electives (12 units)

Electives can be selected in consultation with an advisor from upper or lower division courses outside the department or from approved graduate courses in the School of Information in areas such as Health Data Analytics, Enterprise Content Management and Digital Preservation, Digital Curation, Digital Assets Management, Digital Forensics, Problem Solving with Data.

If electives from the School of Information graduate courses are used to meet the elective requirements, the courses can only be used for the bachelor's degree and cannot be later applied to any graduate degree.

University Electives (14 units)

Total Units Required (120 units)

Information Science and Data Analytics, BS (SJSU Online)

Fully Online Degree Completion Program

The Bachelor of Science Information Science and Data Analytics (BS ISDA), offered by the School of Information through SJSU online, prepares students to work with data, technology, and people. BS ISDA majors attain skills that are applicable to a variety of careers involving analytics, visualization, big data, digital curation, digital assets management, knowledge management, information architecture, documents and records management, health care, education, and emerging technologies-all geared toward the information needs of users. Information Science and Data Analytics graduates are utilized by organizations to organize data and interpret the significance of data in a way that can be easily understood and used by others. They focus on what a person can do with an app rather than what an app does.

Program Delivery

The program is delivered completely online via Canvas. Classes are delivered asynchronously. Where needed, virtual labs are used.

- Program Learning Outcomes

Summary of Degree Units

Units completed before admission including lower division GE and PE	60
SJSU Studies (Upper Division GE and Writing)	12
Major Requirements	48
Total	120

Program Roadmaps

The 2-Year and 3-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Transfer Units (60 units)

All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better. Applicants should also have completed all four CSU-approved Basics Skills courses, each with a C- or better:

- (A1) Oral Communication/Speech
- (A2) Written English Composition

(A3) Critical Thinking/Logic

(B4) Math/Quantitative Reasoning (above the level of intermediate algebra)

- It is recommended that students complete all lower division General Education and the Physical Education requirement before applying for admissions.
- Completion of at least 5 units of the following courses (or equivalents), each with a grade of C- or better:
- ISDA 20C - Web Development *1 unit*
- ISDA 20B - Python Programming *2 units*
- ISDA 20C - Web Development *1 unit*
- ISDA 20D - Computer Operating Systems *1 unit*

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

Recommend completion before transferring from a community college or any university.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Recommended: LLD 100WB - Writing Workshop for Business Students *3 unit(s)*

Major Preparation (5 units)

Courses may be transferred from community colleges or any university. Courses must be passed with a grade of C- or better.

- ISDA 20A - Query Languages 1 *unit(s)*
- ISDA 20B - Python Programming 2 *unit(s)*
- ISDA 20C - Web Development 1 *unit(s)*
- ISDA 20D - Computer Operating Systems 1 *unit(s)*

Major Requirements (48 units)

Core Courses (36 units)

All classes are infused with hands-on, real-world, collaborative projects to support students developing portfolios that demonstrate their knowledge and skills. Where necessary, students will have access to virtual labs such as INFOSEC, Amazon Web Services, Google Cloud Computing.

- ISDA 100 - Technical Writing for Information 3 *unit(s)*
- ISDA 101 - Online Learning: Tools and Strategies for Success 1 *unit(s)*
- ISDA 110 - Technology, Culture, and Society 3 *unit(s)*
- ISDA 111 - Information and Data Science 3 *unit(s)*
- ISDA 120 - Information Security 3 *unit(s)*
- ISDA 121 - Human Centered Cybersecurity 3 *unit(s)*
- ISDA 122 - Privacy, Security, Ethics 2 *unit(s)*
- ISDA 123 - Information Assurance 2 *unit(s)*
- ISDA 130 - User Centered Interface Architecture 3 *unit(s)*
- ISDA 131 - Information Architecture 3 *unit(s)*
- ISDA 140 - Big Data Analytics and Management 3 *unit(s)*
- ISDA 141 - Information Visualization 3 *unit(s)*
- ISDA 170 - The Emerging Future: Technology Issues and Trends 4 *unit(s)*

Major Electives (12 units)

Electives can be selected in consultation with an advisor from upper or lower division courses outside the department or from approved graduate courses in the School of Information in areas such as Health Data Analytics, Enterprise Content Management and Digital Preservation, Digital Curation, Digital Assets Management, Digital Forensics, Problem Solving with Data.

If electives from the School of Information graduate courses are used to meet the elective requirements, the courses can only be used for the bachelor's degree and cannot be later applied to any graduate degree.

Total Units Required (120 units)

Master(s)

Archives and Records Administration, MARA

- Requirements for Admission to Classified Standing
- Requirements for Admission to Conditionally Classified Standing
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (42 units)
- Program Learning Outcomes

The fully online Master of Archives and Records Administration (MARA) degree program at the San Jose State University's School of Information prepares students for leadership positions in information governance and corporate archives.

With the convenient and fully online MARA program, students can live anywhere while they earn their graduate degrees. The master's program is delivered exclusively online via interactive online learning technology. The multimedia format enlivens the learning experience while introducing students to the same types of tools they'll use in their professional careers.

For more information: ischool.sjsu.edu.

Requirements for Admission to Classified Standing

Candidates must meet all university admissions requirements. Applicants who meet the following requirements beyond university requirements will be considered for classified admission into the School of Information:

- A bachelor's degree from any regionally accredited institution in any discipline with a GPA of at least 3.0 at the bachelor's degree institution or in the last 60 semester or 90 quarter units.
- A general understanding of computers and technology. See Technology Literacy Requirements.
- The School requires that all students have computer access from home. See Home Computing Requirements.
- Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Admission to Conditionally Classified Standing

The School of Information does not admit students on a conditional basis.

Requirements for Advancement to Candidacy

In order to achieve candidacy, students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MARA degree are detailed in the Graduate Policies and Procedures section.

Students must complete and submit the Petition for Advancement to Graduate Candidacy after completion of nine graded units and by the posted deadlines for the semester in which they plan to graduate. For additional program requirements and submission instructions, refer to the MARA Candidacy Approval Form Information website. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, and GPA requirements as outlined in the Graduation Requirements section of the Policies and Procedures.

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional and Continuing Education. Registration and enrollment in a Special Session course or program are subject to special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (42 units)

Core Courses (27 units)

- MARA 200 - Record and Recordkeeping Professions 3 *unit(s)* (GWAR)
- MARA 204 - Management of Archives, Records, Inf. Governance 3 *unit(s)*
- MARA 210 - Records Creation, Appraisal, and Retention 3 *unit(s)*
- MARA 211 - Access, Storage and Retrieval of Records 3 *unit(s)*
- MARA 249 - Management of Digital Data, Information, Records 3 *unit(s)*
- MARA 283 - Enterprise Content Management and Digital Preservation 3 *unit(s)*
- MARA 285 - Research Methods in Records Management and Archival Science 3 *unit(s)*
- MARA 286 - Information Assurance 3 *unit(s)*
- MARA 287 - Developing an Information Governance Strategy 3 *unit(s)*

Electives (12 units)

Complete twelve units:

- INFO 202 - Information Retrieval System Design 3 *unit(s)*
- INFO 220 - Resources and Information Services in Professions and Disciplines 1-3 *unit(s)*
- INFO 240 - Information Technology Tools and Applications 3 *unit(s)*
- INFO 242 - Database Design and Management 3 *unit(s)*
- INFO 246 - Information Technology Tools and Applications - Advanced 1-3 *unit(s)*
- INFO 247 - Vocabulary Design 3 *unit(s)*
- INFO 248 - Beginning Cataloging and Classification 3 *unit(s)*
- INFO 251 - Web Usability 3 *unit(s)*
- INFO 256 - Archives and Manuscripts 3 *unit(s)*
- INFO 259 - Preservation Management 3 *unit(s)*
- INFO 280 - History of Books and Libraries 3 *unit(s)*
- INFO 281 - Seminar in Contemporary Issues 1-3 *unit(s)*
- INFO 282 - Seminar in Library Management 1-3 *unit(s)*
- INFO 284 - Seminar in Archives and Records Management 1-3 *unit(s)*
- INFO 287 - Seminar in Information Science 1-3 *unit(s)*
- INFO 298 - Special Studies 1-3 *unit(s)*

- MARA 284 - Seminar in Archives and Records Management 1-3 unit(s)
- MARA 294 - Professional Experience 3 unit(s)

Culminating Experience (Plan B only) (3 units)

- MARA 289 - Advanced Topics in Archives and Records Administration (ePortfolio) 1-3 unit(s) (3 units required)

Total Units Required (42 units)

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Data Analytics, MS

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Data Analytics, offered by the Department of Applied Data Science, is developed in partnership with industry experts targeting students from diverse academic and professional backgrounds. Students receive the advanced education necessary to apply analytics to solve real-world problems by immersing them in the full data analytics process lifecycle.

Students learn how to build portfolios of data analytics projects by leveraging the interrelationship between domain data knowledge and emerging information technologies. Students advance their knowledge and skills through the integration of:

- Identifying domain-specific problems, defining requirements, and establishing measurable organizational objectives.
- Performing data exploration, preparation, visualization, and governance.
- Applying programming, statistics, database, data mining, and machine learning technologies to build models for descriptive, diagnostic, predictive, and prescriptive data analytics.
- Engaging in the development, validation, and monitoring of data analytics systems to meet requirements and objectives.

Today most organizations treat analytics as a strategic asset, and analytics is central to many functional roles and skills. This program prepares students for a career in data analytics in almost all industry domains. Potential career roles for graduates include data analyst, data administrator, business intelligence analyst, and information research scientist.

The program is offered in both regular and special sessions. For more information, visit the [MS Data Analytics program website](#).

Admissions Requirements

Admission to University

Candidates must apply through the CSU admissions portal, Cal State Apply, and meet all university admission requirements.

In addition to holding a bachelor's degree, international applicants (or applicants who earned their degrees in a country where the primary language is not English) must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Admission to Program

Applicants must meet all university admissions requirements. An applicant can be admitted in either classified or conditionally classified standing.

An applicant can be admitted to classified standing if the applicant has a bachelor's degree from an accredited institution with a grade point average of 3.0 or better. In addition, this applicant's preparation for advanced graduate work in mathematics and computer programming must be considered adequate to meet the course prerequisites and other departmental requirements.

Admission to Conditionally Classified Standing

An applicant might be conditionally admitted to the program with a marginal deficiency in the above requirements. The admission letter will explain the required coursework, terms, and conditions for removing deficiencies and attaining classified standing.

Requirements for Advancement to Candidacy

The university requirements for advancement to candidacy for the master's degree are outlined in the Graduate Policies and Procedures section. Candidacy includes successful completion of the Graduation Writing Assessment Requirement (GWAR), MSDA program course requirements and the links to specialization course requirements are listed at sjsu.edu/msda.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS - Data Analytics Graduation Requirements

The program consists of 30 semester units of 200-level courses with a cumulative GPA of 3.0 or better. The program has developed two specializations: Specialization in Analytics Technologies and Specialization in Data Engineering. These specializations will be offered according to industry trends, student demands, and resource availability. For more information, visit the MS in Data Analytics program website.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience (Plan A or Plan B)

All students must complete one of the following culminating experience options as part of their 30-unit program requirement.

Plan A (Thesis)

Students opting to complete a master's thesis will take the DATA 299A and DATA 299B as a two-course sequence. The student is responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as the thesis committee chair. The student must also secure the commitments of two additional university faculty members, one of whom must be a full-time tenured or tenure-track faculty member, to serve as the student's thesis committee. The student must write a thesis proposal and have it approved by the thesis committee and pass the DATA 299A course before enrolling in DATA 299B. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (Project)

The graduate project is a research or development effort performed by a team of students on a topic chosen by mutual agreement between an advisor and the team. The choice of project topic must also be approved by the instructor of DATA 298A. DATA 298A is the first part of the master's project in which students develop a comprehensive plan and preliminary design of a data analytics project. DATA 298B is the second part of the master's project course in which each student completes an in-depth written project to achieve the program outcomes and satisfy the program's culminating experience requirement.

Master's Requirements (30 units)

Core Courses (15 units)

- DATA 220 - Mathematical Methods for Data Analytics 3 *unit(s)*
- DATA 228 - Big Data Technologies and Applications 3 *unit(s)*
- DATA 230 - Business Intelligence and Data Visualization 3 *unit(s)*
- DATA 245 - Machine Learning Technologies 3 *unit(s)* (GWAR)
- DATA 255 - Deep Learning Technologies 3 *unit(s)*

Electives (9 units)

Complete three courses from one specialization:

Analytics Technologies

- DATA 225 - Database Systems for Analytics 3 *unit(s)*
- DATA 240 - Data Mining and Analytics 3 *unit(s)*
- DATA 265 - Large Language Model Applications 3 *unit(s)*

Data Engineering

- DATA 226 - Data Warehouse and Pipeline 3 *unit(s)*
- DATA 236 - Distributed Systems for Data Engineering 3 *unit(s)*
- DATA 266 - Generative Model Applications 3 *unit(s)*

Culminating Experience (6 units)

Complete One Plan:

Plan A (Thesis) (6 units)

- DATA 299A - MSDA Thesis I 3 *unit(s)*
- DATA 299B - MSDA Thesis II 3 *unit(s)*

Plan B (Project) (6 units)

- DATA 298A - MSDA Project I 3 *unit(s)*
- DATA 298B - MSDA Project II 3 *unit(s)*

Total Units Required (30 units)

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Informatics, MS

- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

Informatics is an interdisciplinary and inter-professional field that focuses on collecting, analyzing, securing, and managing data and information; and turning that data and information into actionable knowledge from a user-centered perspective within the context of another domain, such as health or cybersecurity/privacy.

Students will take 18 units of course work that will provide the **foundations and skills** needed to:

- Design and develop secure user-centered knowledge structures for the Web environment using design thinking, prototyping, and human-computer interaction tools.
- Set up secure digital assets management systems (DAM) working with metadata, workflow, taxonomy, data security, governance, and preservation of digital assets.
- Define, identify, control, manage, secure, and preserve electronic records and information including the management of records and information as operational, legal, and historical evidence in electronic environments.
- Manage projects: people, timelines, resources, goals, and outcomes.

The central set of knowledge and skills obtained in the foundation and skills courses can be applied to many different domains as graduates develop their careers.

For more information visit the MS Informatics website.

Requirements for Admission to Classified Standing

Candidates must meet all university admission requirements.

Applicants who meet the following requirements beyond university requirements will be considered for admission into the School of Information:

- A bachelor's degree from any regionally accredited institution in any discipline with a GPA of at least 2.8 at the bachelor's degree institution or in the last 60 semester or 90 quarter units.
- Skill with HTML5 and CSS3 - or updated standards -as demonstrated via class transcripts or work experience.
- The School requires that all students have computer access from home. See Home Computing Requirements.
- Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Admission to Conditional Classified Standing

The School of Information does not admit students on a conditional basis.

Requirements for Advancement to Graduate Candidacy

In order to achieve candidacy, students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the Informatics degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Students must complete and submit the Petition for Advancement to Graduate Candidacy after completion of nine units and by the posted deadlines for the semester in which they plan to graduate.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional and Continuing Education. Registration and enrollment in a Special Session course or program are subject to special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements.

Master's Requirements (30 units)

Foundation and Skills (18 units)

- INFM 200 - Informatics: Fundamentals 3 *unit(s)* (GWAR)
- INFM 201 - Informatics: Technology Foundations 2 *unit(s)*
- INFM 202 - Informatics: Security Overview 1 *unit(s)*
- INFM 203 - Big Data Analytics and Management 2 *unit(s)*
- INFM 204 - Human Centered Design 2 *unit(s)*
- INFM 205 - Informatics: Project Management 2 *unit(s)*
- INFM 206 - Electronic Records: Foundations 3 *unit(s)*
- INFM 207 - DAM: Digital Assets Management 2 *unit(s)*
- INFM 208 - Information Security: Info Assurance 1 *unit(s)*

Specialization Area (9 units)

Specializations will be offered on a rotating basis: Health, and Cybersecurity and Privacy

Health Specialization

- INFM 210 - Health Informatics 3 *unit(s)*
- INFM 213 - Epidemiological Methods 3 *unit(s)*
- INFM 214 - Health Data and Analytics 3 *unit(s)*

Cybersecurity and Privacy Specialization

- INFM 215 - Network Security 3 *unit(s)*
- INFM 216 - Computer Digital Forensics 3 *unit(s)*
- INFM 217 - Tools Lab 3 *unit(s)*

Culminating Experience (Plan B Only) (3 units)

- INFM 211 - Informatics Culminating Project 3 *unit(s)*

Total Units Required (30 units)

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Library and Information Science, MLIS

- Requirements for Admission to Classified Standing
- Requirements for Admission to Conditionally Classified Standing
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (43 units)
- Program Learning Outcomes

The San José State University (SJSU) School of Information prepares individuals for careers as information professionals. Graduates work in diverse areas of the information profession, such as user experience design, digital asset management, information architecture, electronic records management, information governance, digital preservation, and librarianship. The SJSU School of Information delivers all of its graduate degrees and certificates fully online. It is a recognized leader in online education and received the Online Learning Consortium's Outstanding Online Program award.

For more information: ischool.sjsu.edu.

Requirements for Admission to Classified Standing

Candidates must meet all university admission requirements. Applicants who meet the following requirements beyond university requirements will be considered for admission into the School of Information:

- A bachelor's degree from any regionally accredited institution in any discipline with a GPA of at least 3.0 at the bachelor's degree institution or in the last 60 semester or 90 quarter units.
- A general understanding of computers and technology. See Technology Literacy Requirements.
- The School requires that all students have computer access from home. See Home Computing Requirements.
- Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Admission to Conditionally Classified Standing

The School of Information does not admit students on a conditional basis.

Requirements for Advancement to Graduate Candidacy

In order to achieve candidacy, students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MLIS degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Students must complete and submit the Petition for Advancement to Graduate Candidacy after completion of nine units and by the posted deadlines for the semester in which they plan to graduate. For additional program requirements and submission instructions, refer to the MLIS Candidacy Approval Form Information website.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional and Continuing Education. Registration and enrollment in a Special Session course or program are subject to special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing INFO 200.

Culminating Experience

Plan A (Thesis)

The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee.

Plan B (ePortfolio)

The e-Portfolio provides a program-based assessment to ensure that each student demonstrates mastery of all program learning outcomes for the MLIS degree before graduation. It requires students to select, document, and assemble evidence of their competence in a series of skill areas the faculty have deemed essential for entry-level professional performance.

Master's Requirements (43 units)

Core Courses (13 units)

INFO 200, INFO 202, and INFO 204 must be passed with a grade of B or better.

- INFO 200 - Information Communities 3 *unit(s)* (GWAR)
- INFO 202 - Information Retrieval System Design 3 *unit(s)*
- INFO 203 - Online Learning: Tools and Strategies 1 *unit(s)*
- INFO 204 - Information Professions 3 *unit(s)*
- INFO 285 - Applied Research Methods 1-4 *unit(s)*

Electives (27 units)

Complete twenty-seven units from:

- INFO 210 - Reference and Information Services 1-3 *unit(s)* (3 units required)
- INFO 220 - Resources and Information Services in Professions and Disciplines 1-3 *unit(s)*
- INFO 221 - Government Information Sources 3 *unit(s)*
- INFO 230 - Issues in Academic Libraries 3 *unit(s)*
- INFO 231 - Issues in Special Libraries and Information Centers 3 *unit(s)*
- INFO 232 - Issues in Public Libraries 3 *unit(s)*
- INFO 233 - School Library Media Centers 3 *unit(s)*
- INFO 234 - Intellectual Freedom Seminar 3 *unit(s)*
- INFO 237 - School Library Media Materials 3 *unit(s)*
- INFO 240 - Information Technology Tools and Applications 3 *unit(s)*
- INFO 241 - Automated Library Systems 1-3 *unit(s)* (3 units required)
- INFO 242 - Database Design and Management 3 *unit(s)*
- INFO 244 - Online Searching 3 *unit(s)*
- INFO 246 - Information Technology Tools and Applications - Advanced 1-3 *unit(s)*
- INFO 247 - Vocabulary Design 3 *unit(s)*
- INFO 248 - Beginning Cataloging and Classification 3 *unit(s)*
- INFO 250 - Design and Implementation of Instructional Strategies for Information Professionals 3 *unit(s)*
- INFO 251 - Web Usability 3 *unit(s)*
- INFO 254 - Information Literacy and Learning 3 *unit(s)*
- INFO 256 - Archives and Manuscripts 3 *unit(s)*
- INFO 259 - Preservation Management 3 *unit(s)*
- INFO 263 - Materials for Children 3 *unit(s)*
- INFO 265 - Materials for Young Adults Ages 3 *unit(s)*
- INFO 266 - Collection Management 3 *unit(s)*
- INFO 267 - Services to Youth 1-9 *unit(s)*
- INFO 268 - History of Youth Literature 3 *unit(s)*
- INFO 269 - Early Childhood Literacy 3 *unit(s)*
- INFO 271A - Genres and Topics in Youth Literature 1-9 *unit(s)*

- INFO 275 - Library Services for Racially and Ethnically Diverse Communities 3 *unit(s)*
- INFO 280 - History of Books and Libraries 3 *unit(s)*
- INFO 281 - Seminar in Contemporary Issues 1-3 *unit(s)*
- INFO 282 - Seminar in Library Management 1-3 *unit(s)*
- INFO 283 - Marketing of Information Products and Services 1-3 *unit(s)* (3 *units required*)
- INFO 284 - Seminar in Archives and Records Management 1-3 *unit(s)*
- INFO 286 - Interpersonal Communication Skills for Librarians 1-3 *unit(s)*
- INFO 287 - Seminar in Information Science 1-3 *unit(s)*
- INFO 293 - Introduction to Data Networking 3 *unit(s)*
- INFO 294 - Professional Experiences: Internships 2-4 *unit(s)*
- INFO 295 - School Library Field Work 3 *unit(s)*
- INFO 298 - Special Studies 1-3 *unit(s)*

Culminating Experience (3 units)

Complete One Option (Plan A Thesis Or Plan B Portfolio):

Plan A (Thesis)

- INFO 299 - Thesis 3 *unit(s)*

Plan B (Portfolio)

- INFO 289 - Advanced Topics in Library and Information Science 3 *unit(s)*

Total Units Required (43 units)

Students can transfer up to 9 units subject to the School's transfer policies.

Elective courses must be planned in consultation with the Graduate Advisor

A maximum of 15 upper-division undergraduate units can be applied toward the master's degree.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Advanced Certificate(s)

Library and Information Science Post-Master's Certificate

The Post-Master's Certificate program, offered by the School of Information, features eight career pathways focused on diverse specializations, such as digital curation, emerging technologies, web programming, data science, and more! Certificate program students choose one career pathway and then select five courses from that career pathway, tailoring their in-depth learning experience to their career aspirations. In addition, all students begin the program with a one-unit guided learning experience that introduces our school's interactive online learning environment. After completing 16 units of required coursework, certificate students demonstrate their mastery of the program's learning outcomes.

Visit the Post Master's Certificate webpage for more information.

Gainful Employment Disclosure

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Strategic Management of Digital Assets and Services Certificate

The Strategic Management of Digital Assets and Services Certificate, offered by the School of Information, provide students the insights on handling and governance of digital information and data in organizational and networked contexts, including digital assets management, digital curation, information governance, information assurance, data analytics, marketing, community informatics, and demonstrating value. Students pick one career pathway and select 9 units from that pathway.

Visit the Digital Asset Certificate webpage for more information.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

Complete one career pathway and select 9 units from that pathway.

Digital Assets Management Pathway (9 units)

Students select any 9 units from the following:

- INFO 282 - Seminar in Library Management *1-3 unit(s) (3 units required)*
- INFO 284 - Seminar in Archives and Records Management *1-3 unit(s)*

Information Governance, Assurance and Security (9 units)

- MARA 284 - Seminar in Archives and Records Management *1-3 unit(s) (6 units required)*
- INFO 287 - Seminar in Information Science *1-3 unit(s) (3 units required)*

Data Analytics and Data Driven Decision Making (9 units)

Students select any 9 units from the following:

- INFO 246 - Information Technology Tools and Applications - Advanced *1-3 unit(s)*
- INFO 220 - Resources and Information Services in Professions and Disciplines *1-3 unit(s)*
- INFO 282 - Seminar in Library Management *1-3 unit(s)*

Advocacy, Marketing and Community Informatics (9 units)

- INFO 281 - Seminar in Contemporary Issues *1-3 unit(s)*
- INFO 282 - Seminar in Library Management *1-3 unit(s)* (Topic: Digital Assets Management)
- INFO 283 - Marketing of Information Products and Services *1-3 unit(s)*

Total Units Required (9 units)

College of Science

- Overview
- Advising Center
- Special Centers
- Teaching Credential Programs
- Medical Product Development Management MS Program

Office: Science 127

Telephone: 408-924-4800

Website: www.sjsu.edu/science

Leadership:

Michael Kaufman, Dean

Shelley Cargill, Associate Dean of Academic Programs and Student Success

Miri VanHoven, Associate Dean for Research

Overview

San José is at the center of Silicon Valley, known worldwide for its research institutes and industries that set the standard for scientific and technological innovation. San José State is the metropolitan university of the region, and the academic programs of the College of Science prepare students for rewarding careers through our bachelor's and master's level degree programs in the biological sciences, physical sciences, mathematics and computer science fields. Our departments have established partnerships with local employers where students find training and employment opportunities.

The College of Science provides the lower division core biology, chemistry, mathematics and physics courses supporting majors in other technical disciplines (such as engineering). As part of the university general education requirements, we offer courses in quantitative reasoning, the physical universe and its life forms, and earth and the environment. Furthermore, we teach the discipline-specific courses for the science and mathematics teacher credential programs.

Successful science students come from many backgrounds. Some enter the university immediately upon graduation from high school. Others, who have worked or have various life experiences, enroll as either full or part-time students in order to continue their education and better their career opportunities. The maturity, laboratory skills and experience of these students enrich our programs. We have several programs to increase the participation of women and underrepresented students in professional level science. Our College of Science Student Success Center, formerly COSAC, is available to assist students with their academic advising questions.

There are active student clubs associated with each major, several of which have won national recognition for their professional and community service activities. Club members provide mutual support and are able to network with professionals in their field. A list of programs and courses can be found on each department page in the catalog.

- Department of Biological Sciences
- Department of Chemistry
- Department of Computer Science
- Department of Geology
- Department of Mathematics and Statistics
- Department of Physics and Astronomy
- Moss Landing Marine Laboratories
- Science Education Program

College of Science Student Success Center (formerly COSAC)

Office: Located in Duncan Hall (DH) 212

Telephone: 408-924-5193

Email: science-advisingcenter@sjsu.edu

Website: www.sjsu.edu/science-ssc/

Special Centers

The College of Science has several unique interdisciplinary instructional research centers and programs: the Master of Biotechnology, MBT, the Medical Product Development Management, MS, the Clinical Lab Scientist Certificate Program, the Clinical Genetic Molecular Biology Molecular Biologist Advanced Certificate, the Center for Applied Mathematics, Computation and Statistics, the Institute for Modern Optics, the Materials Characterization and Metrology Center, the W.M. Keck Facility for Chemical Research, and the Moss Landing Marine Laboratories. Partially funded by external grants and contracts, these centers provide our students opportunities to participate in sponsored research projects. Cooperative programs with local industries and government laboratories are additional sources of professional experience and financial support for our science majors.

Teaching Credential Programs

Two single subject credential programs are coordinated by the College of Science, in collaboration with the Connie L. Lurie College of Education. The single subject professional programs are designed for individuals who are interested in teaching science or mathematics in middle schools or high schools. The Science Education Program offers single subject credential programs in biology, chemistry, earth science and physics. The Department of Mathematics and Statistics offers a mathematics single subject credential program. For detailed information, contact the appropriate program coordinator.

Medical Product Development Management, MS

Office: Duncan Hall (DH), Room 452

Telephone: 408-924-4853

Website: www.sjsu.edu/mpdm/

Email: kunal.sampat@sjsu.edu

Professors

Sulekha Anand, Statistics

Kunal Sampat, Interim Director, Medical Device & Diagnostics Clinical Trials

Leonard Wesley, Bioinformatics

Arvinder Loomba, PMP, Business Management

Sheldon Mullins, Biopharmaceutical Regulatory Affairs

Vivan Tran, Pharmacovigilance & Drug Safety

Overview

The Masters of Science (MS) degree in Medical Product Development Management (MPDM) is offered by SJSU's College of Science, in collaboration with Professional & Global Engagement and the Lucas Graduate School of Business. The MPDM MS program combines clinical research, regulatory affairs, bioinformatics and customized technical classes with MBA-level business and management courses. The industry-relevant curriculum was designed in collaboration with experts from biomedical companies in the greater San Francisco Bay area to prepare students for careers in the biopharmaceutical, medical devices and in-vitro diagnostics industries. To accommodate students

who work full-time, courses are offered during evenings or weekends, and several classes are offered online for scheduling flexibility.

Undergraduate Major(s)

Applied Mathematics, Applied and Computational Mathematics Concentration, BS

This degree is recommended for students who wish to work in the research and development area of industry. This program also prepares a student for graduate study in applied mathematics, numerical analysis, or operations research.

The concentration in Applied and Computational Mathematics, offered by the Department of Mathematics and Statistics, provides a solid foundation in classical applied mathematics as well as computational mathematics, which could be informally described as "how to employ mathematics on computers wisely." A graduate could seek direct employment assisting a group of scientists with the formulation and solution of problems. There is a great need in local and national technical industries for people with sufficiently strong mathematical knowledge to participate on such teams. For example, modern techniques for solving partial differential equations are very sophisticated; the best method in a given situation depends on the properties of the model. Once a numerical approximation has been formulated, the techniques to solve that, and the commercial software available to do it, again require informed decisions.

Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	47
Major Preparation	23
Major Core Requirements	28
Specialized Tracks	15
University Electives	7
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in the Major must be completed with a grade of "C- or better", and the following Preparation for the Major course with a grade of "C or better": 100W.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)

- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (23 units)

- CS 46A - Introduction to Programming 4 *unit(s)*
- CS 46B - Introduction to Data Structures 4 *unit(s)*
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID + R) or CS 100W (WID) or PHYS 100W (WID) or other 100W in consultation with major advisor.

Support Courses (12 units)

- 12 units in a supporting area, of which at least 6 units must be upper division units. The choices must be approved by the Mathematics and Statistics Department 12 *unit(s)*

Major Requirements (43 units)

Lower Division Requirements (19 units)

- MATH 30 - Calculus I 3 *unit(s)* (B4)
MATH 30X may be used instead of MATH 30.
- MATH 31 - Calculus II 4 *unit(s)* (B4)
MATH 31X may be used instead of MATH 31.
- MATH 32 - Calculus III 3 *unit(s)* (B4)
MATH 32X may be used instead of MATH 32.
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
- MATH 39 - Linear Algebra I 3 *unit(s)*
- MATH 42 - Discrete Mathematics 3 *unit(s)*
MATH 42X may be used instead of MATH 42.

Upper Division Requirements (24 units)

- MATH 143M - Numerical Analysis and Scientific Computing 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*

Complete One Course From:

- MATH 134 - Ord. Diff. Eqns and Dynamical Systems 3 *unit(s)*
- MATH 170 - Mathematical Modeling for the Life Sciences 3 *unit(s)*
- MATH 177 - Linear and Non-Linear Optimization 3 *unit(s)*

Specialized Track (15 units)

Complete one of the following two tracks. Tracks are a cluster of courses used for advising purposes. Tracks will not appear on transcripts or diplomas. Please see an advisor in the Mathematics and Statistics department for more details.

Applied Math Track

- MATH 132 - Advanced Calculus 3 *unit(s)*
- MATH 133B - Partial Differential Equations 3 *unit(s)*
- MATH 138 - Complex Variables 3 *unit(s)*
- MATH 143C - Numerical Analysis and Scientific Computing 3 *unit(s)*

Complete One Course From:

- MATH 127 - Applied and Industrial Algebra 3 *unit(s)*
- MATH 142 - Introduction to Combinatorics 3 *unit(s)*
- MATH 146 - An Introduction to Mathematical Cryptography 3 *unit(s)*
- MATH 179 - Introduction to Graph Theory 3 *unit(s)*

Applied Discrete Math Track

- MATH 142 - Introduction to Combinatorics 3 *unit(s)*
- MATH 179 - Introduction to Graph Theory 3 *unit(s)*

Complete One Course From:

- MATH 127 - Applied and Industrial Algebra 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*

Complete Two Courses (Not Counted Above):

- MATH 127 - Applied and Industrial Algebra 3 *unit(s)*
- MATH 129B - Linear Algebra II 3 *unit(s)*
- MATH 143C - Numerical Analysis and Scientific Computing 3 *unit(s)*
- MATH 143M - Numerical Analysis and Scientific Computing 3 *unit(s)*
- MATH 146 - An Introduction to Mathematical Cryptography 3 *unit(s)*

- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- MATH 162 - Statistics for Bioinformatics 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*
- MATH 177 - Linear and Non-Linear Optimization 3 *unit(s)*
- CS 116A - Introduction to Computer Graphics 3 *unit(s)*
- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 151 - Object-Oriented Design 3 *unit(s)*
- CS 155 - Introduction to the Design and Analysis of Algorithms 3 *unit(s)*
- CS 157A - Introduction to Database Management Systems 3 *unit(s)*
- CS 159 - Introduction to Parallel Processing 3 *unit(s)*

University Electives (7 units)

Total Units Required (120 units)

Biological Sciences - Ecology and Evolution, BS

The BS Ecology and Evolution degree, offered by the Department of Biological Sciences, prepares students for careers in conservation and wildlife management, entomology, zoology, and plant biology for jobs at environmental consulting firms, the California Department of Fish and Wildlife, the US Forest Service, the US Fish and Wildlife Service, water districts, biotechnology companies, and national parks. The program includes several hands-on, field-oriented classes, which prepare students with practical experiences in the field.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	31-37
Major Core	38
Major Electives	7-13
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

Students in this major must complete all lower division courses in the Requirements of the Major with a "C- or better" to graduate.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (31-37 units)

- BIOL 100W - Scientific Communication Workshop 3 *unit(s)* (R+WID)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Statistical Analysis (3 units)

Complete One Course From:

- BIOL 155 - Hypothesis Testing 3 *unit(s)*
- BIOL 156 - Ecological Sampling Design and Analyses 3 *unit(s)*

Organic Chemistry (4-8 units)

Complete One Sequence From:

- CHEM 8 - Organic Chemistry 3 *unit(s)*
- CHEM 9 - Organic Chemistry Lab 1 *unit(s)*
- OR
- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*

Calculus Concepts (3-5 units)

Complete One Course From:

- MATH 19 - Precalculus 5 *unit(s)* (B4)
- MATH 30 - Calculus I 3 *unit(s)* (B4)

Major Requirements (45-51 units)

Core Courses (38 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)
- BIOL 106 - Physiological Ecology 3 *unit(s)*
- BIOL 106L - Physiological Ecology Lab 1 *unit(s)*
- BIOL 113 - Principles of Systematics 3 *unit(s)*
- BIOL 118 - Evolution 4 *unit(s)*
- BIOL 160 - Ecology 4 *unit(s)* (R)
- BIOL 163 - Conservation Biology 3 *unit(s)*
- BOT 165 - Plant Communities of California 4 *unit(s)*

Biological Diversity (8 units)

Complete Two Courses From:

- BOT 104 - Plant Taxonomy 4 *unit(s)*
- ENT 101 - Insect Diversity 4 *unit(s)*
- ZOOL 115 - Invertebrate Zoology and Natural History 4 *unit(s)*
- ZOOL 116 - Vertebrate Evolution and Natural History 4 *unit(s)*

Major Electives (7-13 units)

Complete 7-13 units from:

BOT 104, ENT 101, ZOOL 115 and *ZOOL 116* (whichever weren't taken above),

- BIOL 111 - Fire Ecology 4 *unit(s)*
- BIOL 115 - General Genetics 4 *unit(s)*
- BIOL 124 - Systems Physiology 3 *unit(s)*
- BIOL 148 - Molecular Ecology 4 *unit(s)*
- BIOL 155 - Hypothesis Testing 3 *unit(s)*
- BIOL 161 - Introduction to Marine Ecology 4 *unit(s)*
- BIOL 162 - Marine Biology and Oceanography 4 *unit(s)*
- BIOL 164 - Ecological Field Methods 3 *unit(s)*
- BIOL 180 - Individual Studies 1-4 *unit(s)*
- BOT 104 - Plant Taxonomy 4 *unit(s)*
- CHEM 132 - Introductory Biochemistry 4 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*
- ENT 101 - Insect Diversity 4 *unit(s)*

- ENT 106 - Forensic Entomology 3 *unit(s)*
- GEOL 137 - Introduction to GPS/GIS for Geologic Applications 4 *unit(s)*
- GEOL 142 - Paleontology 4 *unit(s)*
- MICR 101 - General Microbiology 5 *unit(s)*
- ZOOL 115 - Invertebrate Zoology and Natural History 4 *unit(s)*
- ZOOL 116 - Vertebrate Evolution and Natural History 4 *unit(s)*
- ZOOL 143 - Biogeography 3 *unit(s)*
- Other upper-division non-GE BIOL/BOT/ENT/ZOOL/MICR/MS electives with prior advisor approval

Total Units Required (120 units)

Students must obtain a prior advisor approval for electives and for choice of courses within categories.

Biological Sciences - Marine Biology, BS

The BS Marine Biology degree, offered by the Department of Biological Sciences, prepares students for careers in marine science and graduate programs. Students have the opportunity to take specialized, upper-division coursework on the SJSU Campus and at our affiliated Moss Landing Marine Laboratories in Monterey County.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	27
Major Core	35
Major Electives	23
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

Students in this major must complete all lower division courses in the Requirements of the Major with a "C- or better" to graduate.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Of the 39 units, the following 21 units are not satisfied in the major:

- GE Area A1 3 *unit(s)*
- GE Area A2 3 *unit(s)*
- GE Area C1 3 *unit(s)*
- GE Area C2 3 *unit(s)*
- Additional Area C1 or C2 3 *unit(s)*
- GE Area E 3 *unit(s)*
- GE Area F 3 *unit(s)*

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (27 units)

- BIOL 100W - Scientific Communication Workshop 3 *unit(s)* (R+WID)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 8 - Organic Chemistry 3 *unit(s)*
- CHEM 9 - Organic Chemistry Lab 1 *unit(s)*
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Complete one course:

- BIOL 155 - Hypothesis Testing 3 *unit(s)*
- BIOL 156 - Ecological Sampling Design and Analyses 3 *unit(s)*

Major Requirements (58 units)

Core Courses (31 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)
- BIOL 106 - Physiological Ecology 3 *unit(s)*
- BIOL 106L - Physiological Ecology Lab 1 *unit(s)*
- BIOL 113 - Principles of Systematics 3 *unit(s)*
- BIOL 118 - Evolution 4 *unit(s)*
- BIOL 160 - Ecology 4 *unit(s)* (R)
- BIOL 161 - Introduction to Marine Ecology 4 *unit(s)*
- BIOL 162 - Marine Biology and Oceanography 4 *unit(s)*

Biological Diversity (4 units)

Complete one course:

- ZOO 115 - Invertebrate Zoology and Natural History 4 *unit(s)*
- ZOO 116 - Vertebrate Evolution and Natural History 4 *unit(s)*
- MS 112 - Marine Birds and Mammals 4 *unit(s)*
- MS 113 - Marine Ichthyology 4 *unit(s)*
- MS 124 - Marine Invertebrate Zoology I 4 *unit(s)*
- MS 131 - Marine Botany 4 *unit(s)*

Major Electives (23 units)

Complete 23 units from:

- BIOL 115 - General Genetics 4 *unit(s)*
- BIOL 142 - Paleontology 4 *unit(s)*
- BIOL 143 - Biogeography 3 *unit(s)*
- BIOL 148 - Molecular Ecology 4 *unit(s)*
- BIOL 155 - Hypothesis Testing 3 *unit(s)* *If not taken above*
- BIOL 156 - Ecological Sampling Design and Analyses 3 *unit(s)* *If not taken above*
- BIOL 163 - Conservation Biology 3 *unit(s)*
- BIOL 164 - Ecological Field Methods 3 *unit(s)*
- BIOL 180 - Individual Studies 1-4 *unit(s)*
- CHEM 132 - Introductory Biochemistry 4 *unit(s)*
- GEOL 137 - Introduction to GPS/GIS for Geologic Applications 4 *unit(s)*
- GEOL 142 - Paleontology 4 *unit(s)*
- MS 105 - Marine Science Diving 3 *unit(s)*
- MS 112 - Marine Birds and Mammals 4 *unit(s)* *If not taken above*
- MS 113 - Marine Ichthyology 4 *unit(s)* *If not taken above*
- MS 124 - Marine Invertebrate Zoology I 4 *unit(s)* *If not taken above*
- MS 131 - Marine Botany 4 *unit(s)* *If not taken above*
- MS 135 - Physiological Ecology of Marine Algae 4 *unit(s)*
- MS 141 - Geological Oceanography 4 *unit(s)*
- MS 142 - Physical Oceanography 4 *unit(s)*
- MS 143 - Chemical Oceanography 4 *unit(s)*
- MS 180 - Independent Studies 1-4 *unit(s)*
- ZOO 115 - Invertebrate Zoology and Natural History 4 *unit(s)* *If not taken above*

- ZOOL 116 - Vertebrate Evolution and Natural History 4 *unit(s) If not taken above*
- Other upper-division non-GE BIOL/BOT/ZOOL/MICR/MS electives with prior advisor approval

Total Units Required (120 units)

Biological Sciences, BA

The BA Biological Sciences degree, offered by the Department of Biological Sciences, provides a fundamental biology background while affording ample electives for students that desire a high degree of flexibility. This degree program is desirable for careers involving some aspect of biology such as preparation for K-12 teaching programs, pre-professional programs for pharmacy, optometry and dental schools, government fields related to biology, science writing, science illustration, or patent agent.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	35-41
Major Requirements	34-35
University Electives	6-13
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

Students in this major must complete all lower division courses in the Requirements of the Major with a "C- or better" to graduate.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements (except for 1 course in GE Area C and 1 course in GE Area D) and should follow the 60 unit guarantee roadmap (which include the missing GE in Area C and D). Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (35-41 units)

- BIOL 100W - Scientific Communication Workshop 3 *unit(s)* (R+WID)
- BIOL 155 - Hypothesis Testing 3 *unit(s)*
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Organic Chemistry (4-8 units)

Complete the Organic Chemistry A or B course sequence:

Organic Chemistry A

- CHEM 8 - Organic Chemistry 3 *unit(s)*
- CHEM 9 - Organic Chemistry Lab 1 *unit(s)*

Organic Chemistry B

- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*

Biochemistry (4 units)

Complete one course:

- CHEM 132 - Introductory Biochemistry 4 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*

Calculus (3-5 units)

Complete one course:

- MATH 19 - Precalculus 5 *unit(s)* (B4)
- MATH 30 - Calculus I 3 *unit(s)* (B4)

Major Requirements (34-35 units)

Core Courses (15-16 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)

Complete One Course From:

- BIOL 115 - General Genetics 4 *unit(s)*
- BIOL 118 - Evolution 4 *unit(s)*

Complete One Course From:

- BIOL 135B - Eukaryotic Cell and Molecular Biology II 3 *unit(s)* (R)
- BIOL 159 - Integrative Biology 3 *unit(s)* (R)
- BIOL 160 - Ecology 4 *unit(s)* (R)
- BIOL 178 - Integrative Physiology 3 *unit(s)* (R)
- MICR 127 - Microbial Physiology 3 *unit(s)* (R)

Major Electives (19 units)

Major electives selected in consultation with major advisor. BIOL 115, BIOL 118, BIOL 159, and/or BIOL 160 may be used as electives if they are not used to satisfy a requirement in Core Courses. The following courses may be taken as electives in the major for a combined total of 4 units: BIOL 180, BIOL 182, BIOL 184, BIOL 186, BOT 180, BOT 186, ENT 180, ENT 186, MICR 180, ZOOL 180, ZOOL 186, and CHEM 180.

- BIOL 105 - Principles of Developmental Biology 3 *unit(s)*
- BIOL 106 - Physiological Ecology 3 *unit(s)*
- BIOL 106L - Physiological Ecology Lab 1 *unit(s)*
- BIOL 107 - Immunology 3 *unit(s)*
- BIOL 107L - Immunology Laboratory 2 *unit(s)*
- BIOL 111 - Fire Ecology 4 *unit(s)*
- BIOL 113 - Principles of Systematics 3 *unit(s)*
- BIOL 115 - General Genetics 4 *unit(s)*
- BIOL 116 - Molecular Genetics 4 *unit(s)*
- BIOL 116L - Molecular Genetics Laboratory 3 *unit(s)*
- BIOL 117 - Human Genetics 3 *unit(s)*

- BIOL 118 - Evolution 4 *unit(s)*
- BIOL 119 - Neurogenetics 3 *unit(s)*
- BIOL 122 - Bacterial Diversity 2 *unit(s)*
- BIOL 122L - Bacterial Diversity Laboratory 2 *unit(s)*
- BIOL 123A - Bioinformatics I 3 *unit(s)*
- BIOL 123B - Bioinformatics II 3 *unit(s)*
- BIOL 124 - Systems Physiology 3 *unit(s)*
- BIOL 125 - Systems Physiology Laboratory 2 *unit(s)*
- BIOL 131 - Endocrine Physiology 3 *unit(s)*
- BIOL 134 - Vertebrate Histology 4 *unit(s)*
- BIOL 135A - Eukaryotic Cell and Molecular Biology I 3 *unit(s)*
- BIOL 135B - Eukaryotic Cell and Molecular Biology II 3 *unit(s)*
- BIOL 135L - Molecular Cell Biology Lab 3 *unit(s)*
- BIOL 136 - Vertebrate Neurophysiology 3 *unit(s)*
- BIOL 136L - Vertebrate Neurophysiology Laboratory 1 *unit(s)*
- BIOL 137 - Introduction to Principles of Toxicology 3 *unit(s)*
- BIOL 138 - Stem Cell Biology 3 *unit(s)*
- BIOL 139 - Cancer Biology 3 *unit(s)*
- BIOL 143 - Biogeography 3 *unit(s)*
- BIOL 145 - Advanced Undergraduate Biology Seminar 1-3 *unit(s)*
- BIOL 145L - Advanced Undergraduate Biology Lab 1-2 *unit(s)*
- BIOL 155 - Hypothesis Testing 3 *unit(s)*
- BIOL 156 - Ecological Sampling Design and Analyses 3 *unit(s)*
- BIOL 159 - Integrative Biology 3 *unit(s)*
- BIOL 160 - Ecology 4 *unit(s)*
- BIOL 161 - Introduction to Marine Ecology 4 *unit(s)*
- BIOL 162 - Marine Biology and Oceanography 4 *unit(s)*
- BIOL 163 - Conservation Biology 3 *unit(s)*
- BIOL 164 - Ecological Field Methods 3 *unit(s)*
- BIOL 165 - Advanced Human Anatomy 4 *unit(s)*
- BIOL 167 - Cardiorespiratory Physiology 3 *unit(s)*
- BIOL 168 - Reproductive Physiology 3 *unit(s)*
- BIOL 170 - Cellular and Molecular Physiology 3 *unit(s)*
- BIOL 178 - Integrative Physiology 3 *unit(s)*
- BIOL 180 - Individual Studies 1-4 *unit(s)*
- BIOL 181 - Introduction to Health Care 1-3 *unit(s)*
- BIOL 182 - Tutor Assistant in Biology 1-2 *unit(s)*
- BIOL 184 - Directed Reading 1-4 *unit(s)*
- BIOL 186 - Senior Thesis 2-4 *unit(s)*
- BIOL 190 - Field Studies in Biology 1-4 *unit(s)*
- BIOL 198 - Undergraduate Research 0.5-4 *unit(s)*
- BOT 104 - Plant Taxonomy 4 *unit(s)*
- BOT 143 - Biogeography 3 *unit(s)*
- BOT 160 - Ecology 4 *unit(s)*
- BOT 165 - Plant Communities of California 4 *unit(s)*
- BOT 180 - Individual Studies 1-4 *unit(s)*
- BOT 186 - Senior Thesis 2-4 *unit(s)*
- CHEM 180 - Individual Studies 1-4 *unit(s)*
- ENT 101 - Insect Diversity 4 *unit(s)*
- ENT 106 - Forensic Entomology 3 *unit(s)*
- ENT 143 - Biogeography 3 *unit(s)*

- MICR 101 - General Microbiology 5 *unit(s)*
- MICR 122 - Bacterial Diversity 2 *unit(s)*
- MICR 122L - Bacterial Diversity Laboratory 2 *unit(s)*
- MICR 123 - Food Microbiology 2 *unit(s)*
- MICR 123L - Food Microbiology Laboratory 2 *unit(s)*
- MICR 127 - Microbial Physiology 3 *unit(s)*
- MICR 127L - Microbial Physiology Laboratory 2 *unit(s)*
- MICR 140 - Hematology 3 *unit(s)*
- MICR 140L - Hematology Laboratory 2 *unit(s)*
- MICR 141 - Pathogenic Microbiology I 3 *unit(s)*
- MICR 141L - Pathogenic Microbiology I Laboratory 3 *unit(s)*
- MICR 142 - Pathogenic Microbiology II 3 *unit(s)*
- MICR 142L - Pathogenic Microbiology II Laboratory 3 *unit(s)*
- MICR 166 - Bacterial Genetics 4 *unit(s)*
- MICR 170 - General Virology 3 *unit(s)*
- MICR 180 - Individual Studies 1-4 *unit(s)*
- MICR 184 - Directed Reading 1-4 *unit(s)*
- ZOOL 143 - Biogeography 3 *unit(s)*

University Electives (6-13 units)

University electives selected in consultation with major advisor.

Total Units Required (120 units)

Biological Sciences, Microbiology Concentration, BS

The BS Biological Sciences, concentration in Microbiology degree, Department of Biological Sciences, prepares students for positions in industries that use or detect microorganisms and for graduate studies in basic, applied or medical microbiology. The program includes specialized instruction in basic microbiology, immunology, medical microbiology, microbial physiology, bacterial genetics and bacterial diversity. It is also designed to accommodate those who wish to pursue certification as Clinical Laboratory Scientists (medical technologists).

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	17
Major Core Requirements	26
Major/Laboratory Electives	16
Chemistry Minor Requirements	23
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

Students in this major must complete all lower division courses in the Requirements of the Major with a "C- or better" to graduate.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)

- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (17 units)

- BIOL 100W - Scientific Communication Workshop 3 *unit(s)* (R+WID)
- BIOL 155 - Hypothesis Testing 3 *unit(s)*
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- MATH 30 - Calculus I 3 *unit(s)* (B4) (Note: (MATH 30X (3 units) or Advanced Placement (AP) Exam with a score of 3 or higher is also acceptable.)

Major Requirements (42 units)

Core Courses (26 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)
- BIOL 107 - Immunology 3 *unit(s)*
- MICR 101 - General Microbiology 5 *unit(s)*
- MICR 127 - Microbial Physiology 3 *unit(s)* (R)
- MICR 141 - Pathogenic Microbiology I 3 *unit(s)*
- MICR 166 - Bacterial Genetics 4 *unit(s)*

Laboratory Electives (7 units)

Complete at least 7 units of laboratory courses from:

- BIOL 107L - Immunology Laboratory 2 *unit(s)*
 - BIOL 116L - Molecular Genetics Laboratory 3 *unit(s)*
 - BIOL 180 - Individual Studies 1-4 *unit(s)*
 - BIOL 182 - Tutor Assistant in Biology 1-2 *unit(s)*
 - BIOL 184 - Directed Reading 1-4 *unit(s)*
 - BIOL 186 - Senior Thesis 2-4 *unit(s)*
 - CHEM 180 - Individual Studies 1-4 *unit(s)*
 - MICR 122L - Bacterial Diversity Laboratory 2 *unit(s)*
 - MICR 123L - Food Microbiology Laboratory 2 *unit(s)*
 - MICR 127L - Microbial Physiology Laboratory 2 *unit(s)*
 - MICR 140L - Hematology Laboratory 2 *unit(s)*
 - MICR 141L - Pathogenic Microbiology I Laboratory 3 *unit(s)*
 - MICR 142L - Pathogenic Microbiology II Laboratory 3 *unit(s)*
- *Any combination of BIOL 180, 182, 184, 186, or CHEM 180 may be taken for a maximum of 4 units.*

Major Electives (9 units)

Complete 9 additional units from the laboratory electives above or:

- BIOL 115 - General Genetics 4 *unit(s)*
- BIOL 116 - Molecular Genetics 4 *unit(s)*
- BIOL 118 - Evolution 4 *unit(s)*
- BIOL 124 - Systems Physiology 3 *unit(s)*
- BIOL 125 - Systems Physiology Laboratory 2 *unit(s)*
- BIOL 134 - Vertebrate Histology 4 *unit(s)*
- BIOL 135A - Eukaryotic Cell and Molecular Biology I 3 *unit(s)*
- BIOL 135L - Molecular Cell Biology Lab 3 *unit(s)*
- BIOL 156 - Ecological Sampling Design and Analyses 3 *unit(s)*
- CHEM 55 - Quantitative Analysis 2 *unit(s)*
- MICR 122 - Bacterial Diversity 2 *unit(s)*
- MICR 123 - Food Microbiology 2 *unit(s)*
- MICR 140 - Hematology 3 *unit(s)*
- MICR 142 - Pathogenic Microbiology II 3 *unit(s)*
- MICR 170 - General Virology 3 *unit(s)*

Chemistry Minor Requirements (23 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)

- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- CHEM 120S - Chemical Safety Seminar 1 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*

Total Units Required (120 units)

Students pursuing the California State Clinical Laboratory Science license should consult an advisor for additional requirements.

Biological Sciences, Molecular Biology Concentration, BS

The BS Biological Sciences, concentration in Molecular Biology degree, offered by the Department of Biological Sciences, prepares students for careers in the biotechnology industry including research, drug development, marketing, and management, for graduate or professional school (PhD, MD, other health science-related programs), and for patent law. The program includes a strong theoretical background as well as intensive hands-on laboratory experience.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	17
Major Core Requirements	28
Major Electives	14
Chemistry Minor Requirements	23
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

Students in this major must complete all lower division courses in the Requirements of the Major with a "C- or better" to graduate.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)

- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (17 units)

- BIOL 100W - Scientific Communication Workshop 3 *unit(s)* (R+WID)
- BIOL 155 - Hypothesis Testing 3 *unit(s)*
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- MATH 30 - Calculus I 3 *unit(s)* (B4) (Note: MATH 30X (3 units) or Advanced Placement (AP) Exam with a score of 3 or higher is also acceptable)

Major Requirements (42 units)

Core Courses (28 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)
- BIOL 115 - General Genetics 4 *unit(s)*
- BIOL 116 - Molecular Genetics 4 *unit(s)*
- BIOL 116L - Molecular Genetics Laboratory 3 *unit(s)*
- BIOL 135A - Eukaryotic Cell and Molecular Biology I 3 *unit(s)*
- BIOL 135B - Eukaryotic Cell and Molecular Biology II 3 *unit(s)* (R)
- BIOL 135L - Molecular Cell Biology Lab 3 *unit(s)*

Major Electives (14 units)

Complete 14 units of major electives:

- BIOL 105 - Principles of Developmental Biology 3 *unit(s)*
- BIOL 107 - Immunology 3 *unit(s)*
- BIOL 107L - Immunology Laboratory 2 *unit(s)*
- BIOL 117 - Human Genetics 3 *unit(s)*
- BIOL 119 - Neurogenetics 3 *unit(s)*
- BIOL 123A - Bioinformatics I 3 *unit(s)*
- BIOL 123B - Bioinformatics II 3 *unit(s)*
- BIOL 124 - Systems Physiology 3 *unit(s)*
- BIOL 125 - Systems Physiology Laboratory 2 *unit(s)*
- BIOL 136 - Vertebrate Neurophysiology 3 *unit(s)*
- BIOL 137 - Introduction to Principles of Toxicology 3 *unit(s)*
- BIOL 138 - Stem Cell Biology 3 *unit(s)*
- BIOL 139 - Cancer Biology 3 *unit(s)*
- BIOL 180 - Individual Studies 1-4 *unit(s)*
- BIOL 182 - Tutor Assistant in Biology 1-2 *unit(s)*
- BIOL 184 - Directed Reading 1-4 *unit(s)*
- BIOL 186 - Senior Thesis 2-4 *unit(s)*
- BIOL 198 - Undergraduate Research 0.5-4 *unit(s)* (1-4 *units* required)
- CHEM 180 - Individual Studies 1-4 *unit(s)*
- MICR 101 - General Microbiology 5 *unit(s)*
- MICR 166 - Bacterial Genetics 4 *unit(s)*
- MICR 170 - General Virology 3 *unit(s)* (or other courses with prior advisor approval, at least 9 elective units must be in Biological Sciences)

**Any combination of BIOL 180, 182, 184, 186, or CHEM 180 may be taken for a maximum of 4 units.*

Chemistry Minor Requirements (23 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- CHEM 120S - Chemical Safety Seminar 1 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*

Total Units Required (120 units)

Biological Sciences, Systems Physiology Concentration, BS

The BS Biological Sciences, concentration in Systems Physiology degree, offered by the Department of Biological Sciences, prepares students for professional health schools including medicine, dentistry, veterinary science, and pharmacy, for graduate studies, and for positions that require knowledge of physiological systems, especially of physiological data collection and recording. The program provides specialized, focused courses pertaining to bodily systems.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements

38

Major Preparation	17
Major Core Requirements	23
Major Electives	19
Chemistry Minor Requirements	23
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

Students in this major must complete all lower division courses in the Requirements of the Major with a "C- or better" to graduate.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (17 units)

- BIOL 100W - Scientific Communication Workshop 3 *unit(s)* (R+WID)
- BIOL 155 - Hypothesis Testing 3 *unit(s)*
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- MATH 30 - Calculus I 3 *unit(s)* (B4) (Note: MATH 30X (3 units) or Advanced Placement (AP) Exam with a score of 3 or higher is also acceptable)

Major Requirements (42 units)

Core Courses (23 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)
- BIOL 115 - General Genetics 4 *unit(s)*
- BIOL 124 - Systems Physiology 3 *unit(s)*
- BIOL 125 - Systems Physiology Laboratory 2 *unit(s)*
- BIOL 170 - Cellular and Molecular Physiology 3 *unit(s)*
- BIOL 178 - Integrative Physiology 3 *unit(s)* (R)

Major Electives (19 units)

Complete 16 units:

- BIOL 105 - Principles of Developmental Biology 3 *unit(s)*
- BIOL 107 - Immunology 3 *unit(s)*
- BIOL 107L - Immunology Laboratory 2 *unit(s)*
- BIOL 131 - Endocrine Physiology 3 *unit(s)*
- BIOL 134 - Vertebrate Histology 4 *unit(s)*
- BIOL 135L - Molecular Cell Biology Lab 3 *unit(s)*
- BIOL 136 - Vertebrate Neurophysiology 3 *unit(s)*
- BIOL 136L - Vertebrate Neurophysiology Laboratory 1 *unit(s)*
- BIOL 137 - Introduction to Principles of Toxicology 3 *unit(s)*
- BIOL 165 - Advanced Human Anatomy 4 *unit(s)*
- BIOL 167 - Cardiorespiratory Physiology 3 *unit(s)*
- BIOL 168 - Reproductive Physiology 3 *unit(s)*
- BIOL 180 - Individual Studies 1-4 *unit(s)*
- BIOL 182 - Tutor Assistant in Biology 1-2 *unit(s)*
- BIOL 184 - Directed Reading 1-4 *unit(s)*
- BIOL 186 - Senior Thesis 2-4 *unit(s)*
- CHEM 180 - Individual Studies 1-4 *unit(s)*

**Any combination of BIOL 180, 182, 184, 186, or CHEM 180 may be taken for a maximum of 4 units.*

Complete 3 units:

Courses can also be taken from the 16-unit list above.

Other courses with prior advisor consent

- BIOL 116 - Molecular Genetics 4 *unit(s)*

- BIOL 116L - Molecular Genetics Laboratory 3 *unit(s)*
- BIOL 117 - Human Genetics 3 *unit(s)*
- BIOL 119 - Neurogenetics 3 *unit(s)*
- BIOL 135B - Eukaryotic Cell and Molecular Biology II 3 *unit(s)* (R)
- MICR 101 - General Microbiology 5 *unit(s)*
- MICR 140 - Hematology 3 *unit(s)*
- MICR 140L - Hematology Laboratory 2 *unit(s)*

Chemistry Minor Requirements (23 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- CHEM 120S - Chemical Safety Seminar 1 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*

Total Units Required (120 units)

Chemistry, BA

This program, offered by the Department of Chemistry, provides a fundamental chemistry background, while affording ample electives for developing a second specialty. The degree is designed for those wishing to work in scientific laboratories, or in fields allied to chemistry such as medicine, education, environmental monitoring, electronics, food processing, sales, pharmaceuticals, safety, literature search, or in a supervisory capacity in businesses dealing with chemical products.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	14
Major Requirements	52
University Electives	16
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Prerequisite Requirements

Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements (except for 1 course in GE area C and 1 course in GE area D) and should follow the 60 unit guarantee roadmap (which include the missing GE in area C and D). Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)

- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (14 units)

PHYS 50 and PHYS 51 accepted for Transfers, in lieu of PHYS 2A/PHYS 2B.

- MATH 30 - Calculus I 3 *unit(s)* (B4)
MATH 30X may be used instead of MATH 30.
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHIL 133 - Ethics in Science 3 *unit(s)* (V)

Major Requirements (52 units)

Core Courses (33 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 55 - Quantitative Analysis 2 *unit(s)*
- CHEM 55L - Quantitative Analysis Laboratory 2 *unit(s)*

- CHEM 100W - Writing Workshop: Chemical Communications 3 *unit(s)* (*WID*)
- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- CHEM 113B - Organic Chemistry Lab 3 *unit(s)*
- CHEM 120S - Chemical Safety Seminar 1 *unit(s)*
- CHEM 160 - Physical Chemistry 4 *unit(s)*

Approved Upper Division Chemistry Electives (19 units)

Students must complete at least three Upper Division lab courses, including at least one capstone course.

Elective Lab Courses (4-6 units)

Complete two courses from:

- CHEM 131A - Biochemistry Lab 2 *unit(s)*
- CHEM 155 - Instrumental Analysis 4 *unit(s)*
- CHEM 162L - Physical Chemistry Lab 2 *unit(s)*

Capstone Course (3 units)

Complete one course from:

- CHEM 114 - Advanced Organic Chemistry Lab 3 *unit(s)*
- CHEM 131B - Biochemistry Lab II 3 *unit(s)* (*R*)
- CHEM 146 - Physical-Inorganic Techniques 3 *unit(s)*

Other Upper Division Chemistry Electives (10-12 units)

Complete 10-12 units from:

- CHEM 105 - Computational Data Analysis in Chemistry 3 *unit(s)*
- CHEM 121S - Radiation Safety 1-2 *unit(s)*
- CHEM 130A - Biochemistry 4 *unit(s)* (*CHEM 135 or CHEM 130A may count toward the degree.*)
- CHEM 130B - Biochemistry 4 *unit(s)*
- CHEM 130C - Biochemistry 3 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)* (*CHEM 135 or CHEM 130A may count toward the degree.*)
- CHEM 145 - Inorganic Chemistry 3 *unit(s)*
- CHEM 170A - Macromolecular, Supramolecular & Nanoscale Systems 1 *unit(s)*
- CHEM 180 - Individual Studies 1-4 *unit(s)*
- CHEM 191 - Undergraduate Seminar 0.5 *unit(s)*
- CHEM 213 - Organic Synthesis 3 *unit(s)*
- CHEM 236 - Biophysical Methods 3 *unit(s)*
- CHEM 245 - Advanced Inorganic Chemistry 3 *unit(s)*
- CHEM 250 - Current Topics in Analytical Chemistry 3 *unit(s)*

University Electives (16 units)

A minor is strongly recommended.

Total Units Required (120 units)

Chemistry, Biochemistry Concentration, BS

The Biochemistry concentration, offered by the Department of Chemistry, is designed for students interested in graduate work in biochemistry, medicine or related fields, or for responsible positions in industrial or government laboratories.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	29
Major Preparation	33
Major Core Requirements	29
Concentration Requirements	29
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Prerequisite Requirements

Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (18 units)

Of the 39 units required by the university, 21 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (33 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)
- BIOL 115 - General Genetics 4 *unit(s)*
- ENGL 1B - Argument and Analysis 3 *unit(s)* (C2) (or equivalent.)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- PHIL 133 - Ethics in Science 3 *unit(s)* (V)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Major Requirements (58 units)

Core Courses (29 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 55 - Quantitative Analysis 2 *unit(s)*
- CHEM 55L - Quantitative Analysis Laboratory 2 *unit(s)*
- CHEM 100W - Writing Workshop: Chemical Communications 3 *unit(s)* (WID)
- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- CHEM 113B - Organic Chemistry Lab 3 *unit(s)*
- CHEM 120S - Chemical Safety Seminar 1 *unit(s)*

Biochemistry Concentration Required Courses (29 units)

- CHEM 130A - Biochemistry 4 *unit(s)*
- CHEM 130B - Biochemistry 4 *unit(s)*
- CHEM 130C - Biochemistry 3 *unit(s)*
- CHEM 131A - Biochemistry Lab 2 *unit(s)*
- CHEM 160 - Physical Chemistry 4 *unit(s)*

Capstone Course (3 units)

- CHEM 131B - Biochemistry Lab II 3 *unit(s)* (R)

Science Electives (9 units)

Complete 9 units from the following where a maximum of 3 units may be taken on a CR/NC grading basis:

- BIOL 107 - Immunology 3 *unit(s)*

- BIOL 107L - Immunology Laboratory 2 *unit(s)*
- BIOL 116 - Molecular Genetics 4 *unit(s)*
- BIOL 116L - Molecular Genetics Laboratory 3 *unit(s)*
- BIOL 117 - Human Genetics 3 *unit(s)*
- BIOL 118 - Evolution 4 *unit(s)*
- BIOL 119 - Neurogenetics 3 *unit(s)*
- BIOL 123A - Bioinformatics I 3 *unit(s)*
- BIOL 123B - Bioinformatics II 3 *unit(s)*
- BIOL 124 - Systems Physiology 3 *unit(s)*
- BIOL 125 - Systems Physiology Laboratory 2 *unit(s)*
- BIOL 135A - Eukaryotic Cell and Molecular Biology I 3 *unit(s)*
- BIOL 135B - Eukaryotic Cell and Molecular Biology II 3 *unit(s)* (R)
- BIOL 135L - Molecular Cell Biology Lab 3 *unit(s)*
- BIOL 137 - Introduction to Principles of Toxicology 3 *unit(s)*
- BIOL 165 - Advanced Human Anatomy 4 *unit(s)*
- BIOL 170 - Cellular and Molecular Physiology 3 *unit(s)*
- MICR 101 - General Microbiology 5 *unit(s)*
- CHEM 105 - Computational Data Analysis in Chemistry 3 *unit(s)*
- CHEM 114 - Advanced Organic Chemistry Lab 3 *unit(s)*
- CHEM 145 - Inorganic Chemistry 3 *unit(s)*
- CHEM 155 - Instrumental Analysis 4 *unit(s)*
- CHEM 162L - Physical Chemistry Lab 2 *unit(s)*
- CHEM 170A - Macromolecular, Supramolecular & Nanoscale Systems 1 *unit(s)*
- CHEM 180 - Individual Studies 1-4 *unit(s)*
- CHEM 184 - Directed Reading 1-3 *unit(s)*
- CHEM 191 - Undergraduate Seminar 0.5 *unit(s)*

Total Units Required (120 units)

Chemistry, BS

This curriculum prepares students for graduate work in chemistry or for responsible positions in industrial or government laboratories. This degree, offered by the Department of Chemistry, meets all requirements for Certification by the American Chemical Society. It does not require a minor, although with judicious choice of electives, a minor may be obtained in biology, mathematics, or physics.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	32
Major Preparation	28
Major Requirements	60
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Prerequisite Requirements

Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (18 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements (except for 1 course in GE area C and 1 course in GE area D) and should follow the 60 unit guarantee roadmap (which include the missing GE in area C and D). Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (28 units)

- ENGL 1B - Argument and Analysis 3 *unit(s)*
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- PHIL 133 - Ethics in Science 3 *unit(s)* (V)
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)

Major Requirements (60 units)

Core Courses (29 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 55 - Quantitative Analysis 2 *unit(s)*
- CHEM 55L - Quantitative Analysis Laboratory 2 *unit(s)*
- CHEM 100W - Writing Workshop: Chemical Communications 3 *unit(s)* (WID)
- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- CHEM 113B - Organic Chemistry Lab 3 *unit(s)*
- CHEM 120S - Chemical Safety Seminar 1 *unit(s)*

Major Courses (23 units)

- CHEM 105 - Computational Data Analysis in Chemistry 3 *unit(s)*
- CHEM 130A - Biochemistry 4 *unit(s)*
- CHEM 145 - Inorganic Chemistry 3 *unit(s)*
- CHEM 155 - Instrumental Analysis 4 *unit(s)*
- CHEM 161A - Physical Chemistry 3 *unit(s)*
- CHEM 161B - Physical Chemistry 3 *unit(s)*
- CHEM 162L - Physical Chemistry Lab 2 *unit(s)*
- CHEM 170A - Macromolecular, Supramolecular & Nanoscale Systems 1 *unit(s)*

Capstone Course (3 units)

- CHEM 146 - Physical-Inorganic Techniques 3 *unit(s)*

Science Electives (5 units)

Complete five units from:

- ASTR 117A - Astrophysics I 3 *unit(s)*
- CHEM 114 - Advanced Organic Chemistry Lab 3 *unit(s)*
- CHEM 121S - Radiation Safety 1-2 *unit(s)*
- CHEM 131A - Biochemistry Lab 2 *unit(s)*
- CHEM 180 - Individual Studies 1-4 *unit(s)*
- CHEM 191 - Undergraduate Seminar 0.5 *unit(s)*
- CHEM 213 - Organic Synthesis 3 *unit(s)*
- CHEM 218 - Organotransition Metal Chemistry 3 *unit(s)*
- CHEM 236 - Biophysical Methods 3 *unit(s)*
- CHEM 245 - Advanced Inorganic Chemistry 3 *unit(s)*
- CHEM 250 - Current Topics in Analytical Chemistry 3 *unit(s)*
- MATH 112 - Vector Calculus 3 *unit(s)*
- MATH 33LA - Differential Equations and Linear Algebra 3 *unit(s)*
- MATH 39 - Linear Algebra I 3 *unit(s)*
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
- MATH 138 - Complex Variables 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- PHYS 122 - Modern Physics 4 *unit(s)*

- PHYS 130 - Mathematical Methods in Physics 4 *unit(s)*
- PHYS 158 - Modern Optics 3 *unit(s)*
- PHYS 160 - Thermodynamics and Statistical Physics 3 *unit(s)*

Total Units Required (120 units)

Climate Science, BS

The BS Climate Science program (formerly Meteorology, Climate Science concentration, BS), offered by the Department of Meteorology and Climate Science, is designed to prepare students for careers in emerging fields of climate change studies and mitigation, and related fields including energy and carbon management. Graduating students will be ready to begin careers in the private sector or in government, or in government agencies as a climatologist, sustainability consultant, renewable energy scientist, geoscientist, or will be ready to enter graduate programs in the atmospheric/climate sciences.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	20
Major Core Requirements	53
Concentration Electives	9
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (20 units)

- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Major Requirements (62 units)

Core Courses (53 units)

- COMM 146F - Communication and the Environment 4 *unit(s)*
- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- ENVS 133 - Sustainable Energy Strategies 3 *unit(s)*
- GEOL 3 - Planet Earth 3 *unit(s)* (B1)
- ISE 103 - Life Cycle Engineering 3 *unit(s)*
- METR 12 - Global Warming: Science and Solutions 3 *unit(s)* (B1)
- METR 40 - Weather Seminar 1 *unit(s)*
- METR 50 - Scientific Computing I 2 *unit(s)*
- METR 51 - Scientific Computing II 2 *unit(s)*
- METR 60 - Meteorology and Climate Science I 3 *unit(s)*
- METR 61 - Meteorology and Climate Science II 2 *unit(s)*
- METR 100W - Writing Workshop: Meteorological Reports 3 *unit(s)* (WID)
- METR 123 - Advanced Climatology 3 *unit(s)*
- METR 135 - The Global Carbon Cycle 3 *unit(s)*
- METR 136 - Applied Statistics and Analysis in Meteorology 3 *unit(s)*
- METR 163 - Meteorological Instrumentation 3 *unit(s)*
- METR 173 - Global Climate Modeling 3 *unit(s)*
- METR 174 - Climate Change Capstone 3 *unit(s)*

Major Electives (9 units)

Students may use 3 units of METR 168A to satisfy the elective. Complete nine units from:

- ENVS 107 - Introduction to Environmental Economics and Policy 4 *unit(s)*
- ENVS 116 - Solar Energy Analysis 3 *unit(s)*

- ENVS 124 - Introduction to Environmental Law 3 *unit(s)*
- ENVS 128 - Water Resource Management 3 *unit(s)*
- ENVS 130 - Energy Policy Analysis 3 *unit(s)*
- ENVS 132 - Solar Home Design 3 *unit(s)*
- GEOG 120 - Food Supply and Agricultural Systems 3 *unit(s)*
- GEOG 124 - Special Topics in Geography 3 *unit(s)*
- GEOG 130 - Natural Resources 3 *unit(s)*
- GEOG 70 - Introduction to Geographic Information Systems 4 *unit(s)*
- GEOG 171 - Advanced Geographic Information Systems 4 *unit(s)*
- GEOG 181 - Introduction to Remote Sensing 3 *unit(s)*
- GEOG 182 - Programming for GIS 3 *unit(s)*
- METR 131 - Air Pollution Meteorology 3 *unit(s)*

Total Units Required (120 units)

Computer Science and Linguistics, BS

The BS Computer Science and Linguistics program, jointly offered by the Department of Computer Science and the Department of Linguistics and Language Development, prepares students with foundational knowledge and skills for the combination of Computer Science and Linguistics careers. It features a computing-based curriculum and instructs students in the theory and practice of language, linguistics and applied linguistics, and computer science to prepare students for job careers in automated text analysis, machine translation, grammar checking, speech synthesis & recognition, artificial intelligence, machine learning, web search, information retrieval, big data analytics, and more. The program also prepares students for entry to graduate programs in a wide variety of interdisciplinary fields such as computational linguistics, natural language processing, computer science, artificial intelligence, information research, media studies, and human-computer interaction. Its balanced coursework provides students with strong computing, analytical, and linguistics-focused skills to understand and solve problems for business and research, with strong societal and cultural implications.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	22
Major Requirements	53
University Electives	1
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

A grade of "C-" or better is required for courses being used to meet any requirement in any minor or major offered by the Department of Computer Science, including Major Preparation courses.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with the major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with the major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (22 units)

- MATH 30 - Calculus I 3 *unit(s)* (B4) (*MATH 30X & MATH 30W (5 units) may be used in place of MATH 30.*)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 39 - Linear Algebra I 3 *unit(s)*
- MATH 42 - Discrete Mathematics 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- CS 100W - Technical Writing Workshop 3 *unit(s)* (WID) or LLD 100W - Writing Workshop 3 *unit(s)* (WID)
- PHIL 134 - Computers, Ethics and Society 3 *unit(s)* (V)

Requirements of the Major (53 units)

Lower Division (11 units)

- CS 22A - Python for Everyone 3 *unit(s)* (B4)
- CS 46A - Introduction to Programming 4 *unit(s)*
- CS 46B - Introduction to Data Structures 4 *unit(s)*

Upper Division (33 units)

- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 154 - Formal Languages and Computability 3 *unit(s)*
- CS 156 - Introduction to Artificial Intelligence 3 *unit(s)*
- CS 171 - Introduction to Machine Learning 3 *unit(s)*

- LING 101 - Introduction to Linguistics 3 *unit(s)*
- LING 111 - Introduction to Linguistic Phonetics 3 *unit(s)*
- LING 115 - Corpus Linguistics 3 *unit(s)*
- LING 124 - Introduction to Speech Technology 3 *unit(s)*
- LING 165 - Introduction to Natural Language Processing 3 *unit(s)*

Complete one from:

- LING 112 - Introduction to Syntax 3 *unit(s)*
- LING 113 - Introduction to Phonology 3 *unit(s)*
- LING 114 - Introduction to Semantics and Discourse 3 *unit(s)*
- LING 162 - Introduction to Morphology 3 *unit(s)*

Complete one from:

- LING 125 - Introduction to Historical and Comparative Linguistics 3 *unit(s)*
- LING 161 - Psycholinguistics 3 *unit(s)*
- LING 166 - Sociolinguistics 3 *unit(s)*
- LING 167 - Multilingualism and Language Contact 3 *unit(s)*

Major Electives (9 units)

Complete 9 units from:

- CS 22B - Python Programming for Data Analysis 3 *unit(s)*
- CS 47 - Introduction to Computer Systems 3 *unit(s)*
- CS 116A - Introduction to Computer Graphics 3 *unit(s)*
- CS 122 - Advanced Programming with Python 3 *unit(s)*
- CS 131 - Processing Big Data - Tools and Techniques 3 *unit(s)*
- CS 133 - Introduction to Data Visualization 3 *unit(s)*
- CS 149 - Operating Systems 3 *unit(s)*
- CS 151 - Object-Oriented Design 3 *unit(s)*
- CS 153 - Concepts of Compiler Design 3 *unit(s)*
- CS 155 - Introduction to the Design and Analysis of Algorithms 3 *unit(s)*
- CS 157A - Introduction to Database Management Systems 3 *unit(s)*
- CS 157B - Database Management Systems II 3 *unit(s)*
- CS 157C - NoSQL Database Systems 3 *unit(s)*
- CS 158A - Computer Networks 3 *unit(s)*
- CS 166 - Information Security 3 *unit(s)*
- CS 176 - Introduction to Social Network Analysis 3 *unit(s)*
- CS 190 - Internship Project 1 *unit(s)* or CS 190I - Internship Project 3 *unit(s)* (*at most 3 units may be used*)
- LING 107 - Patterns of English 3 *unit(s)*
- LING 108 - Introduction to Second Language Development, Teaching, and Assessment 3 *unit(s)*
- LING 112 - Introduction to Syntax 3 *unit(s)*
- LING 113 - Introduction to Phonology 3 *unit(s)*
- LING 114 - Introduction to Semantics and Discourse 3 *unit(s)*
- LING 122 - English as a World Language 3 *unit(s)* (V)
- LING 125 - Introduction to Historical and Comparative Linguistics 3 *unit(s)*
- LING 161 - Psycholinguistics 3 *unit(s)*
- LING 162 - Introduction to Morphology 3 *unit(s)*

- LING 165 - Introduction to Natural Language Processing 3 *unit(s)*
- LING 166 - Sociolinguistics 3 *unit(s)*
- LING 167 - Multilingualism and Language Contact 3 *unit(s)*
- LING 180 - Individual Studies 1-3 *unit(s)*
- UNVS 101 - Leadership and Career Accelerator 3 *unit(s)*

OR ONE of the courses below:

- CS 85A - Practical Computing Topics 1 *unit(s)* or CS 85C - Practical Computing Topics 1-3 *units (at most 3 units may be used)*
- CS 180 - Individual Studies 1-3 *unit(s) (may be used with prior approval)*
- CS 180H - Individual Studies for Honors 3 *unit(s) (may be used with prior approval)*
- CS 185A - Advanced Practical Computing Topics 1 *unit(s)* or CS 185C - Advanced Practical Computing Topics 3 *units (at most 3 units may be used)*

University Electives (1 unit)

Total Units Required (120 units)

Computer Science, BS

This degree, offered by the Department of Computer Science, provides a solid background for a variety of careers in the computing profession. Entry level positions include jobs in programming, systems analysis, software engineering and customer support. Such positions are required by nearly every institution whether it is public or private. The program not only prepares students for graduate work in computer science, but also for advanced work in the related fields of management science and operations research.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	27
Major Requirements	38
Major Electives	14
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

A grade of "C-" or better is required for courses being used to meet any requirement in any minor or major offered by the Department of Computer Science, including Major Preparation courses. The Major Preparation and Major Requirements must include at least 37 units of upper division mathematics and computer science course work, excluding CS 100W.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Of the 39 units, the following 24 units are not satisfied in the major:

- GE Area A 9 unit(s)
- GE Area C 9 unit(s)
- GE Area E 3 unit(s)
- GE Area F 3 unit(s)

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details. Of the 9 units, the following 6 units are not satisfied in the major:

- SJSU Studies Area R
- SJSU Studies Area S

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 unit(s) (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 unit(s) (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 unit(s) (D)
- AAS 33B - Asian Americans in U.S. History II 3 unit(s) (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with grade of C or better (C- not accepted) is required to meet graduation requirement. Exceptions to the GWAR may be found at Graduation Writing Assessment Requirement (GWAR).

This requirement is fulfilled in this major with

- CS 100W - Technical Writing Workshop 3 *unit(s)* (WID)

Major Preparation (27 units)

- MATH 30 - Calculus I 3 *unit(s)* (B4) (*MATH 30X & MATH 30W (5-units) may be used in place of MATH 30.*)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 42 - Discrete Mathematics 3 *unit(s)*
- MATH 39 - Linear Algebra I 3 *unit(s)*
- PHIL 134 - Computers, Ethics and Society 3 *unit(s)* (V)

Additional Mathematics Course (3 units)

Complete one course:

- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 142 - Introduction to Combinatorics 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*

Approved Science Electives (8 units)

Students must complete a total of 8 units of science electives. At least six of those units must be fulfilled by the courses listed below. The remaining units may be satisfied by GE Areas B1, B2, B3.

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2/B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2/B3)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1/B3)
- GEOL 1 - General Geology 4 *unit(s)* (B1/B3)
- GEOL 4L - Earth Systems Lab 1 *unit(s)* (B3)
- GEOL 7 - Earth, Time and Life 4 *unit(s)* (B1/B3)
- METR 10 - Weather and Climate 3 *unit(s)* (B1)
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1/B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1/B3)

Major Requirements (52 units)

Lower Division (11 units)

- CS 46A - Introduction to Programming 4 *unit(s)* or CS 46AX - Introduction to Programming 4 *unit(s)*
- CS 46B - Introduction to Data Structures 4 *unit(s)*
- CS 47 - Introduction to Computer Systems 3 *unit(s)*

Upper Division (27 units)

- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 147 - Computer Architecture 3 *unit(s)*
- CS 149 - Operating Systems 3 *unit(s)*
- CS 151 - Object-Oriented Design 3 *unit(s)*
- CS 152 - Programming Paradigms 3 *unit(s)*
- CS 154 - Formal Languages and Computability 3 *unit(s)*
- CS 157A - Introduction to Database Management Systems 3 *unit(s)*
- CS 160 - Software Engineering 3 *unit(s)*
- CS 166 - Information Security 3 *unit(s)*

Major Electives (14 units)

Required Major Elective (minimum of one course)

Complete at least **one** major elective from the following list of electives:

- CS 116A - Introduction to Computer Graphics 3 *unit(s)*
- CS 116B - Computer Graphics Algorithms 3 *unit(s)*
- CS 122 - Advanced Programming with Python 3 *unit(s)*

- CS 123A - Bioinformatics I 3 *unit(s)*
- CS 123B - Bioinformatics II 3 *unit(s)*
- CS 131 - Processing Big Data - Tools and Techniques 3 *unit(s)*
- CS 133 - Introduction to Data Visualization 3 *unit(s)*
- CS 134 - Computer Game Design and Programming 3 *unit(s)*
- CS 136 - Introduction to Computer Vision 3 *unit(s)*
- CS 144 - Advanced C++ Programming 3 *unit(s)*
- CS 153 - Concepts of Compiler Design 3 *unit(s)*
- CS 155 - Introduction to the Design and Analysis of Algorithms 3 *unit(s)*
- CS 156 - Introduction to Artificial Intelligence 3 *unit(s)*
- CS 157B - Database Management Systems II 3 *unit(s)*
- CS 157C - NoSQL Database Systems 3 *unit(s)*
- CS 158A - Computer Networks 3 *unit(s)*
- CS 158B - Computer Network Management 3 *unit(s)*
- CS 159 - Introduction to Parallel Processing 3 *unit(s)*
- CS 161 - Software Project 3 *unit(s)*
- CS 168 - Blockchain and Cryptocurrencies 3 *unit(s)*
- CS 171 - Introduction to Machine Learning 3 *unit(s)*
- CS 174 - Server-side Web Programming 3 *unit(s)*
- CS 175 - Mobile Device Development 3 *unit(s)*
- CS 176 - Introduction to Social Network Analysis 3 *unit(s)*

Additional Upper Division Electives

At most 6 units of CS 85A/C and CS 185A/C may be used.

- CS 108 - Introduction to Game Studies 3 *unit(s)*
- CS 143C - Numerical Analysis and Scientific Computing 3 *unit(s)*
- CS 143M - Numerical Analysis and Scientific Computing 3 *unit(s)*
- CS 180 - Individual Studies 1-3 *unit(s)* or CS 180H - Individual Studies for Honors 3 *unit(s)* (*may be used with prior advisor approval*)
- CS 185A - Advanced Practical Computing Topics 1 *unit(s)*
- CS 185C - Advanced Practical Computing Topics 3 *unit(s)*
- CS 190 - Internship Project 1 *unit(s)* or CS 190I - Internship Project 3 *unit(s)* (*at most 3 units may be used*)

Lower Division Electives

Students must secure prior department consent to use the following courses to satisfy the major elective requirement, except for CS 48, which does not require special consent.

- CS 48 - Applied Algorithms 1 *unit(s)*
- CS 85A - Practical Computing Topics 1 *unit(s)*
- CS 85C - Practical Computing Topics 3 *unit(s)*

Only one of the following:

- CS 49C - Programming in C 3 *unit(s)*
- or
- CS 49J - Programming in Java 3 *unit(s)*

Mathematics Electives

- MATH 142 - Introduction to Combinatorics 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 162 - Statistics for Bioinformatics 3 *unit(s)*
- MATH 164 - Mathematical Statistics 3 *unit(s)*
- MATH 177 - Linear and Non-Linear Optimization 3 *unit(s)*
- MATH 178 - Mathematical Modeling 3 *unit(s)*
- MATH 179 - Introduction to Graph Theory 3 *unit(s)*
- MATH 203 - Applied Mathematics, Computation, and Statistics Projects 3 *unit(s)* (*may be used with prior advisor approval*)

Total Units Required (120 units)

Data Science, BS

The BS Data Science, offered by the Department of Computer Science, prepares students with foundational knowledge and skills for data science careers. It features a computing-based curriculum and instructs students in the theory and practice of data management, machine learning, and computing analysis of data-centered problems. Its balanced coursework provides students with strong analytical, computing, and data-focused skills to understand and solve problems for business and research, with societal, cultural impacts. Graduates of this program will have the necessary knowledge, tools, and skills for solving complex real-world problems, drawing conclusions from data-driven methodologies. Students will meet the qualifications for data scientist positions in industry and government and will apply a sound understanding of the social and ethical implications of data analytics in their work as data scientists.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	25
Major Requirements	51
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

A grade of "C-" or better is required for courses being used to meet any requirement in any minor or major offered by the Department of Computer Science, including Major Preparation courses.

University Requirements

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)

- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (25 units)

- MATH 30 - Calculus I 3 *unit(s)* (B4) (MATH 30X & MATH 30W (5 units) may be used in place of MATH 30.)
- MATH 31 - Calculus II 4 *unit(s)* (B4) (MATH 31X & MATH 31W (5 units) may be used in place of MATH 31.)
- MATH 39 - Linear Algebra I 3 *unit(s)*
- MATH 42 - Discrete Mathematics 3 *unit(s)* (MATH 42X & MATH 42W (4 units) may be used in place of MATH 42.)
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 167R - Statistical Programming with R 3 *unit(s)*
- CS 100W - Technical Writing Workshop 3 *unit(s)* (WID)
- PHIL 133 - Ethics in Science 3 *unit(s)* (V)

Major Requirements (51 units)

CS 22A or CS 122 (3 units)

Complete one course:

- CS 22A - Python for Everyone 3 *unit(s)* (requires prior department approval) (B4)
- CS 122 - Advanced Programming with Python 3 *unit(s)*

Lower Division (8 units)

- CS 46A - Introduction to Programming 4 *unit(s)* or CS 46AX - Introduction to Programming 4 *unit(s)*
- CS 46B - Introduction to Data Structures 4 *unit(s)*

Upper Division (21 units)

- CS 131 - Processing Big Data - Tools and Techniques 3 *unit(s)*
- CS 133 - Introduction to Data Visualization 3 *unit(s)*
- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 156 - Introduction to Artificial Intelligence 3 *unit(s)*
- CS 157A - Introduction to Database Management Systems 3 *unit(s)*
- CS 163 - Data Science Senior Project 3 *unit(s)*

- CS 171 - Introduction to Machine Learning 3 *unit(s)*

Major Electives (13 units)

Complete 13 units from the following courses:

- CS 22B - Python Programming for Data Analysis 3 *unit(s)*
- CS 47 - Introduction to Computer Systems 3 *unit(s)*
- CS 48 - Applied Algorithms 1 *unit(s)*
- CS 49J - Programming in Java 3 *unit(s)* (*may be used with prior approval*)
- CS 85A - Practical Computing Topics 1 *unit(s)* (*may be used with prior approval*)
- CS 85C - Practical Computing Topics 3 *unit(s)* (*at most 3 units may be used*) **or** CS 180 - Individual Studies 1-3 *unit(s)* (*may be used with prior approval*) **or** CS 180H - Individual Studies for Honors 3 *unit(s)* (*may be used with prior approval*)
- CS 116A - Introduction to Computer Graphics 3 *unit(s)*
- CS 122 - Advanced Programming with Python 3 *unit(s)*
- CS 123A - Bioinformatics I 3 *unit(s)*
- CS 123B - Bioinformatics II 3 *unit(s)*
- CS 136 - Introduction to Computer Vision 3 *unit(s)*
- CS 151 - Object-Oriented Design 3 *unit(s)*
- CS 155 - Introduction to the Design and Analysis of Algorithms 3 *unit(s)*
- CS 157B - Database Management Systems II 3 *unit(s)*
- CS 157C - NoSQL Database Systems 3 *unit(s)*
- CS 158A - Computer Networks 3 *unit(s)*
- CS 166 - Information Security 3 *unit(s)*
- CS 176 - Introduction to Social Network Analysis 3 *unit(s)*
- CS 185C - Advanced Practical Computing Topics 3 *unit(s)* (*At most 6 units may be used*)
- CS 190 - Internship Project 1 *unit(s)* **or** CS 190I - Internship Project 3 *unit(s)* (*At most 3 units may be used*)
- MATH 32 - Calculus III 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- MATH 161C - Applied Probability and Statistics III 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*
- MATH 164 - Mathematical Statistics 3 *unit(s)*
- UNVS 101 - Leadership and Career Accelerator 3 *unit(s)*

Domain Field Electives (6 units)

Complete 6 units of major requirement courses of one particular major program (excluding BS - Computer Science, BS - Software Engineering, and BS - Information Science and Data Analytics) to gain domain expertise; requires prior department approval.

Total Units Required (120 units)

Earth System Science, BS

The Earth System Science (ESS) major, offered by the Department of Geology, is designed to broaden the perspectives of geoscience students by integrating an understanding of Earth's biological and physical systems with interdisciplinary, solutions-oriented investigations of the human dimensions of sustainability. The Earth System Science degree will prepare students for career options including geohazard assessment, environmental geology,

climate change and environmental remediation, water resource management, geoscience consulting, Earth Science teaching, and other career opportunities that center the societal-Earth connection.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Preparation	23
Major Requirements	31
Major Electives	20-23
University Electives	5-8
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (23 units)

- BIOL 10 - The Living World 3 *unit(s)* (B2)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- GEOL 111 - Geology and the Environment 3 *unit(s)* (R)
- MATH 19 - Precalculus 5 *unit(s)* (B4)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
or PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

Major Requirements (31 units)

Lower Division (8 units)

Complete one of the following (4 units):

- GEOL 1 - General Geology 4 *unit(s)* (B1+B3)
- GEOL 3 - Planet Earth 3 *unit(s)* (B1) and GEOL 4L - Earth Systems Lab 1 *unit(s)* (B3)
- GEOL 7 - Earth, Time and Life 4 *unit(s)* (B1+B3)
- GEOL 9 - Earth Disasters 4 *unit(s)* (B1+B3)

Complete the following two courses (4 units):

- GEOL 5 - Sustainability, Human Development, and the Earth 3 *unit(s)* (E)
- GEOL 28 - Geology Outdoors 1 *unit(s)*

Upper Division (19 units)

- Any 100W 3 *unit(s)* (WID)
- GEOL 130 - Marine Geology 4 *unit(s)*
- GEOL 134 - Geomorphology 4 *unit(s)*
- GEOL 138 - Hydrogeology 4 *unit(s)*
- GEOL 142 - Paleontology 4 *unit(s)*

Capstone (4 units)

- GEOL 145 - Earth System Science 4 *unit(s)*

Major Electives (20-23 units)

Complete 20-23 units of STEM and interdisciplinary in consultation with your major advisor. The following are a list of *recommended* electives.

- GEOL 124 - Sedimentology and Stratigraphy 3 unit(s) (R)
- GEOL 135 - Geochemistry 4 unit(s)
- GEOL 137 - Introduction to GPS/GIS for Geologic Applications 4 unit(s)
- BIOL 110 - Biodiversity and Biopolitics 3 unit(s) (R)
- METR 155 - Remote Sensing 3 unit(s)
- ENVS 1 - Introduction to Environmental Issues 3 unit(s) (A3)
- ENVS 107 - Introduction to Environmental Economics and Policy 4 unit(s)
- ENVS 119 - Energy and the Environment 3 unit(s) (R)
- ENVS 124 - Introduction to Environmental Law 3 unit(s)
- ENVS 185 - Environmental Impact Analysis 4 unit(s) (Crosslisted with URBP)
- ENVS 187 - Environmental Restoration 4 unit(s)
- GEOG 107 - Mapping the World 3 unit(s) (R)
- GEOG 70 - Introduction to Geographic Information Systems 4 unit(s)
- GEOG 181 - Introduction to Remote Sensing 3 unit(s)
- GEOG 182 - Programming for GIS 3 unit(s)

University Electives (5-8 units)

The following are recommended electives:

- ANTH 11 - Cultural Anthropology 3 unit(s) (D)
- ANTH 129 - Environmental Anthropology 3 unit(s)
- PHIL 126 - Environmental Ethics and Philosophy 3 unit(s)
- PHIL 133 - Ethics in Science 3 unit(s)
- POLS 135 - U.S. Environmental Policy 3 unit(s) (Crosslisted with ENVS)
- SOCI 141 - Environmental Sociology 3 unit(s)
- URBP 142 - Introduction to Environmental Planning 4 unit(s) (Crosslisted with ENVS)

Total Units Required (120 units)

Geology, BS

The BS in Geology, offered by the Department of Geology, provides a flexible program that prepares students for careers in environmental remediation and management, water resources, natural hazards mitigation, geophysics and geology, engineering and hazardous materials, and digital mapping. Our graduates find work in local and international firms as well as in regional, state, and federal government agencies.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	16
Major Requirements	54
University Electives	15
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (16 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- MATH 30 - Calculus I 3 *unit(s)* (B4)

Complete One Sequence From:

Fundamentals

- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)

General Physics

- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)

Major Requirements (54 units)

Core Courses (34-36 units)

- GEOL 1 - General Geology 4 unit(s) (B1+B3)
- GEOL 7 - Earth, Time and Life 4 unit(s) (B1+B3)
- GEOL 28 - Geology Outdoors 1 unit(s)
- Any 100W 3 unit(s) (WID)
- GEOL 120 - Fundamentals of Mineralogy 3 unit(s)
- GEOL 122 - Petrology 4 unit(s)
- GEOL 124 - Sedimentology and Stratigraphy 3 unit(s) (R)
- GEOL 125 - Structural Geology 4 unit(s)
- GEOL 129A - Spring Field Geology 2 unit(s)
- GEOL 137 - Introduction to GPS/GIS for Geologic Applications 4 unit(s)

Complete One Course From:

- GEOL 129B - Advanced Field Geology 4 unit(s) (Note: students planning to pursue licensure as a Professional Geologist should take GEOL 129B)
- GEOL 129C - Digital Geologic Field Mapping 2 unit(s)

Geology Electives (18-20 units)

Complete 18-20 units from:

- GEOL 127 - Tectonics 3 unit(s)
- GEOL 129C - Digital Geologic Field Mapping 2 unit(s) (If not taken as Geology Core Course)
- GEOL 130 - Marine Geology 4 unit(s)
- GEOL 132 - Planetary Geology 3 unit(s)
- GEOL 134 - Geomorphology 4 unit(s)
- GEOL 135 - Geochemistry 4 unit(s)
- GEOL 138 - Hydrogeology 4 unit(s)
- GEOL 140 - Principles of Engineering Geology 4 unit(s)
- GEOL 142 - Paleontology 4 unit(s)
- GEOL 143 - Active Tectonics 4 unit(s)
- GEOL 145 - Earth System Science 4 unit(s)
- GEOL 147 - Introduction to Applied Geophysics 4 unit(s)
- GEOL 174 - Hazardous Materials 3 unit(s)
- GEOL 180 - Individual Studies 1-3 unit(s)
- MS 141 - Geological Oceanography 4 unit(s)

University Electives (15 units)

MATH 31 recommended for graduate school or technical careers

Total Units Required (120 units)

Mathematics, BA

The BA - Mathematics, offered by the Department of Mathematics and Statistics, is recommended for students who enjoy problem solving and would like to apply problem solving skills along with communication and analyzing skills in a future career. This degree also provides an excellent background for graduate work in mathematics and other disciplines including law and medicine as well as engineering and science.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	12-15
Major Requirements	46
University Electives	15-18
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in the Major must be completed with a grade of "C- or better", and the following Preparation for the Major course with a grade of "C or better": 100W.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements And should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (12-15 units)

- ENGR 100W - Engineering Reports 3 *unit(s)* (*WID+R*) or CS 100W (*WID*) or PHYS 100W (*WID*) or other 100W in consultation with major advisor.
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (*B1+B3*)

Complete one course (3-4 units):

- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (*B1+B3*) (PHYS 52 also accepted.)
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*

With prior approval, 6 units of upper division mathematics-related courses from other departments may be substituted for PHYS 50 and PHYS 51/MATH 161A.

Programming (2-4 units)

Complete one course:

- MATH 50 - Scientific Computing I 2 *unit(s)*
- MATH 167R - Statistical Programming with R 3 *unit(s)*
- CS 22A - Python for Everyone 3 *unit(s)* (*B4*)
- CS 46A - Introduction to Programming 4 *unit(s)*
- CS 49C - Programming in C 3 *unit(s)*
- CS 49J - Programming in Java 3 *unit(s)*
- CMPE 30 - Programming Concepts and Methodology 3 *unit(s)*

Major Requirements (46 units)

Core Courses (16 units)

- MATH 30 - Calculus I 3 *unit(s)* (*B4*)
MATH 30X may be used instead of MATH 30.
- MATH 31 - Calculus II 4 *unit(s)* (*B4*)
MATH 31X may be used instead of MATH 31.
- MATH 32 - Calculus III 3 *unit(s)* (*B4*)
MATH 32X may be used instead of MATH 32.
- MATH 39 - Linear Algebra I 3 *unit(s)*
- MATH 42 - Discrete Mathematics 3 *unit(s)*

MATH 42X may be used instead of MATH 42.

Upper Division Core (15 units)

- MATH 108 - Introduction to Abstract Mathematics and Proofs 3 *unit(s)*
- MATH 128A - Abstract Algebra I 3 *unit(s)*
- MATH 131A - Introduction to Analysis 3 *unit(s)*

Complete one course (3 units):

- MATH 112 - Vector Calculus 3 *unit(s)*
- MATH 115 - Modern Geometry and Transformations 3 *unit(s)*
- MATH 138 - Complex Variables 3 *unit(s)*

Complete one course (3 units):

- MATH 128B - Abstract Algebra II 3 *unit(s)*
- MATH 129B - Linear Algebra II 3 *unit(s)*
- MATH 131B - Introduction to Real Variables 3 *unit(s)*

Upper Division Mathematics Elective (15 units)

Complete five courses (not counted above) from:

- MATH 112 - Vector Calculus 3 *unit(s)*
- MATH 115 - Modern Geometry and Transformations 3 *unit(s)*
- MATH 126 - Theory of Numbers 3 *unit(s)*
- MATH 128B - Abstract Algebra II 3 *unit(s)*
- MATH 129B - Linear Algebra II 3 *unit(s)*
- MATH 131B - Introduction to Real Variables 3 *unit(s)*
- MATH 132 - Advanced Calculus 3 *unit(s)*
- MATH 133B - Partial Differential Equations 3 *unit(s)*
- MATH 134 - Ord. Diff. Eqns and Dynamical Systems 3 *unit(s)*
- MATH 138 - Complex Variables 3 *unit(s)*
- MATH 142 - Introduction to Combinatorics 3 *unit(s)*
- MATH 143C - Numerical Analysis and Scientific Computing 3 *unit(s)*
- MATH 143M - Numerical Analysis and Scientific Computing 3 *unit(s)*
- MATH 146 - An Introduction to Mathematical Cryptography 3 *unit(s)*
- MATH 150 - Theory of Interest 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- MATH 162 - Statistics for Bioinformatics 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*
- MATH 164 - Mathematical Statistics 3 *unit(s)*
- MATH 170 - Mathematical Modeling for the Life Sciences 3 *unit(s)* **OR** MATH 178 - Mathematical Modeling 3 *unit(s)*
- MATH 177 - Linear and Non-Linear Optimization 3 *unit(s)*
- MATH 179 - Introduction to Graph Theory 3 *unit(s)*
- MATH 180 - Individual Studies 1-4 *unit(s)* (*Requires prior approval*)
- MATH 180H - Individual Studies for Honors 3 *unit(s)* (*Requires prior approval*)

- MATH 180R - Undergraduate Research in Mathematics 1-4 unit(s) (Requires prior approval)
- MATH 203 - Applied Mathematics, Computation, and Statistics Projects 3 unit(s)

University Electives (15-18 units)

Total Units Required (120 units)

Mathematics, Integrated Teacher Education Program, BA

A National Science Foundation Noyce Grant awardee, the Mathematics, BA Integrated Teacher Education Program (ITEP) major is designed for students interested in teaching mathematics in high school or middle school. The coursework satisfies requirements for a BA in Mathematics and Single Subject Credential - Mathematics (SSC), including 21 units of the Education Specialist Preliminary Teaching Credential: Mild/Moderate Support Needs (ESC). The Mathematics, Integrated Teacher Education Program, BA has been approved by the California Commission on Teacher Credentialing (CCTC) as an integrated undergraduate teacher preparation program. Students who complete the 4-year BA Math degree will be recommended to the CCTC for a preliminary single subject credential to teach middle school and high school mathematics. Students who complete the ESC requirements for an additional school year after graduation (18 units) will be recommended to the CCTC to receive a preliminary education in mild to moderate services and earn a Master of Arts in Special Education.

Those students interested in earning the BA Mathematics, Single Subject Credential in Mathematics, Education Specialist Credential in Mild/Moderate Support Services, and MA in Special Education are strongly encouraged to enroll in the SAGE Mathematics Program, that is, Math ITEP + MA SPED + ESC program. Note that this is an accelerated honors program that will allow 12 units of coursework to double count for both the BA and MA degree (EDSE 102, 218D, 279, and 270). Students who opt to do the BA Math ITEP program and MA SPED program separately will not be allowed to double count those units in the stand alone MA SPED degree and will have to take 12 units of substitute courses to fulfill the MA SPED unit requirements.

BA Math ITEP students must have successfully passed the California Basic Educational Skills Test (or equivalent alternatives) and completed 80% of math coursework in order to satisfy subject matter competency and engage in solo teaching in middle school or high school math classrooms. Minimum grade point average (GPA) criteria is required to verify subject matter competency and entry to student teaching.

The subject matter preparation component of the integrated Math Integrated Teacher Education Program, offered by the Department of Mathematics and Statistics, includes (1) a minimum of 30 semester units of core mathematics coursework that is directly related to subjects that are commonly taught in departmentalized mathematics classes in California public schools and (2) a minimum of 15 semester units of coursework that provides extended study (breadth and depth) of the subject.

The 33 required upper division units of credential courses need to be taken at SJSU.

Learn more about the initial eligibility requirements before beginning the credential component of the BA Math ITEP.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	29
Major Preparation	15-17
Major Core Requirements	43

Credential Requirements 32

Total 120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in the Major must be completed with a grade of "C- or better", and the following Preparation for the Major course with a grade of "C or better": ENGR 100W.

All credential courses in the Preparation and Required in the Major must be completed with a grade of "B" or better.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (15-17 units)

- AAS 25 / AFAM 25 / CCS 25 - The Changing Majority: Power and Ethnicity in America 3 *unit(s)* (F) (*Multicultural Foundations*)
- CHAD 60 - Child Development 3 *unit(s)* (E)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)

Programming (2-4 units)

Complete one course:

- CMPE 30 - Programming Concepts and Methodology 3 *unit(s)*
- CS 22A - Python for Everyone 3 *unit(s)* (B4)
- CS 46A - Introduction to Programming 4 *unit(s)*
- CS 49C - Programming in C 3 *unit(s)*
- CS 49J - Programming in Java 3 *unit(s)*
- MATH 50 - Scientific Computing I 2 *unit(s)*
- MATH 167R - Statistical Programming with R 3 *unit(s)*

Major Requirements (76 units)

Lower Division Courses (16 units)

- MATH 30 - Calculus I 3 *unit(s)* (B4) (MATH 30X may be used instead of MATH 30.)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 39 - Linear Algebra I 3 *unit(s)*
- MATH 42 - Discrete Mathematics 3 *unit(s)*

Upper Division Core (27 units)

- MATH 102 - Secondary School Mathematics 3 *unit(s)*
- MATH 108 - Introduction to Abstract Mathematics and Proofs 3 *unit(s)*
- MATH 115 - Modern Geometry and Transformations 3 *unit(s)*
- MATH 126 - Theory of Numbers 3 *unit(s)*
- MATH 128A - Abstract Algebra I 3 *unit(s)*
- MATH 128B - Abstract Algebra II 3 *unit(s)* OR MATH 129B - Linear Algebra II 3 *unit(s)* OR MATH 131B - Introduction to Real Variables 3 *unit(s)*
- MATH 131A - Introduction to Analysis 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*

Credential Requirements (33 units)

- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S)
- EDSE 124 - Teach for Social Justice: Language & Disability 3 *unit(s)* (V)
- EDSE 215 - Assessing Students with Disabilities 3 *unit(s)*
- EDSE 218D - Teaching Students with Autism Spectrum Disorders 3 *unit(s)*
- EDSE 279 - Positive Behavior Support 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- MTED 184X - Student Teaching Phase I 4 *unit(s)*
- MTED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- MTED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*
- MTED 394 - Secondary Mathematics Methods 3 *unit(s)*

Total Units Required (120-122 units)

Meteorology, BS

The BS Meteorology degree program, offered by the Department of Meteorology and Climate Science, is designed to develop meteorologists who, upon graduation, are ready to begin professional practice in the private sector or in government, or are ready to enter graduate programs in atmospheric science.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	39
Major Preparation	27
Major Requirements	54
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All Preparation and Required in the Major courses must be completed with a "C- or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (27 units)

A minimum grade of "C-" must be attained in all major and preparation courses.

- CHEM 1A - General Chemistry 5 unit(s) (B1+B3)
- MATH 30 - Calculus I 3 unit(s) (B4)
- MATH 31 - Calculus II 4 unit(s) (B4)
- MATH 32 - Calculus III 3 unit(s) (B4)
- PHYS 50 - General Physics I: Mechanics 4 unit(s) (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 unit(s) (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 unit(s) (B1+B3)

Major Requirements (54 units)

Core Courses (48 units)

- METR 10 - Weather and Climate 3 unit(s) (B1)
- METR 40 - Weather Seminar 1 unit(s)
- METR 50 - Scientific Computing I 2 unit(s)
- METR 51 - Scientific Computing II 2 unit(s)
- METR 60 - Meteorology and Climate Science I 3 unit(s)
- METR 61 - Meteorology and Climate Science II 2 unit(s)
- METR 100W - Writing Workshop: Meteorological Reports 3 unit(s) (WID)
- METR 121A - Dynamic Meteorology 4 unit(s)
- METR 121B - Dynamic Meteorology 3 unit(s)
- METR 123 - Advanced Climatology 3 unit(s)
- METR 125 - Physical Meteorology 3 unit(s)
- METR 136 - Applied Statistics and Analysis in Meteorology 3 unit(s)
- METR 150 - Computers in Meteorology III 3 unit(s)
- METR 163 - Meteorological Instrumentation 3 unit(s)
- METR 170A - Weather Briefing 1 unit(s)
- METR 170B - Weather Briefing 1 unit(s)
- METR 171A - Synoptic Weather Analysis and Forecasting 3 unit(s)
- METR 172 - Mesoscale Meteorology 3 unit(s)
- METR 179 - Topics in Senior Thesis 1-2 unit(s) (2 units required)

Major Electives (6 units)

Complete two courses from:

- METR 130 - Boundary Layer Meteorology 3 unit(s)
- METR 131 - Air Pollution Meteorology 3 unit(s)
- METR 155 - Remote Sensing 3 unit(s)
- METR 161 - Introduction to Hydrometeorology 3 unit(s)
- METR 164 - Introduction to Fire Weather 3 unit(s)
- METR 165 - Mountain Meteorology 3 unit(s)

- METR 170C - Weather Briefing III 1 unit(s)
- METR 173 - Global Climate Modeling 3 unit(s)
- METR 174 - Climate Change Capstone 3 unit(s)
- METR 185 - Special Topics 1-3 unit(s)

Total Units Required (120 units)

Physics, BA

This 120-unit program, offered by the Department of Physics and Astronomy, provides a strong foundation in physics while allowing sufficient electives for the student to pursue a second program of study in another field (e.g., science education, business, math, or another science; transfer students must take at least 12 units of upper division physics major courses at SJSU with a GPA of 2.0 or better in these courses).

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	30
Major Requirements	34
University Electives	12
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or Specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Major Preparation (30 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)

Major Requirements (34 units)

Core Courses (34 units)

- PHYS 20 - Invitation to Physics and Astronomy 1 *unit(s)*
- PHYS 40 - Introduction to Computational Physics 3 *unit(s)*
- PHYS 105A - Advanced Mechanics I 4 *unit(s)*
- PHYS 110A - Electricity and Magnetism I 3 *unit(s)*
- PHYS 120A - Electronics, Data Acquisition & Analysis 3 *unit(s)*
- PHYS 122 - Modern Physics 4 *unit(s)*
- PHYS 130 - Mathematical Methods in Physics 4 *unit(s)*
- PHYS 160 - Thermodynamics and Statistical Physics 3 *unit(s)*
- Additional units of upper division physics 9 *unit(s)*

University Electives (12 units)

Total Units Required (120 units)

Physics, BS

This 120-unit program, offered by the Department of Physics and Astronomy, prepares students for professional positions in applied and computational physics or for graduate study (transfer students must take at least 12 units of upper division physics major courses at SJSU with a GPA of 2.0 or better in these courses).

- Program Learning Outcomes
- Summary of Degree Units**

University Graduation Requirements	44
Major Preparation	34
Major Requirements	39
University Electives	3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or Specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Major Preparation (34 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*

- PHYS 20 - Invitation to Physics and Astronomy 1 *unit(s)*
- PHYS 40 - Introduction to Computational Physics 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)

Major Requirements (39 units)

Core Courses (33 units)

- PHYS 105A - Advanced Mechanics I 4 *unit(s)*
- PHYS 110A - Electricity and Magnetism I 3 *unit(s)*
- PHYS 110B - Electricity and Magnetism II 3 *unit(s)*
- PHYS 120A - Electronics, Data Acquisition & Analysis 3 *unit(s)*
- PHYS 122 - Modern Physics 4 *unit(s)*
- PHYS 130 - Mathematical Methods in Physics 4 *unit(s)*
- PHYS 140 - Computational Methods in Physics 3 *unit(s)*
- PHYS 160 - Thermodynamics and Statistical Physics 3 *unit(s)*
- PHYS 163 - Quantum Mechanics 3 *unit(s)*

Complete One Course From:

- PHYS 120B - Advanced Scientific Measurements Laboratory 3 *unit(s)*
- PHYS 120C - Advanced Physics Lab: Optics and Lasers 3 *unit(s)*

Astronomy and Physics Electives (6 units)

Additional six units in upper division Physics or Astrophysics from:

- ASTR 117A - Astrophysics I 3 *unit(s)*
- ASTR 117B - Astrophysics II 3 *unit(s)*
- ASTR 155 - Topics in Modern Astrophysics 3 *unit(s)*
- PHYS 105B - Advanced Mechanics II 3 *unit(s)*
- PHYS 120B - Advanced Scientific Measurements Laboratory 3 *unit(s)*
- PHYS 120C - Advanced Physics Lab: Optics and Lasers 3 *unit(s)*
- PHYS 155 - Topics in Physics and Astronomy 3-9 *unit(s)*
- PHYS 158 - Modern Optics 3 *unit(s)*
- PHYS 168 - Lasers 3 *unit(s)*
- PHYS 175A - Solid State Physics 3 *unit(s)*
- PHYS 180 - Individual Studies 1-4 *unit(s)* (no more than 3 units)

University Electives (3 units)

Total Units Required (120 units)

Physics, Preparation for Teaching, BA

This major is designed for students interested in teaching science in high school or middle school. Students enrolled in this program will earn units towards their single subject credential as an undergraduate. The following course work satisfies San José State University's requirements for a BA in Physics, offered by the Department of Physics and Astronomy. A minimum grade point average (GPA) criterion may be required for verification of subject matter competency. Completion of the program will not guarantee admission to the credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See "Teaching: How to Become a Teacher in California" (see Teaching) for information on application and admission to credential programs.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	18
Major Requirements	53
University Electives	5
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Major Preparation (18 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 33A - Ordinary Differential Equations for SCI & ENGR 3 *unit(s)*

Major Requirements (53 units)

Core Courses (53 units)

- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- EDSC 162 - Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDSC 173 - Psychological Foundations of Secondary Teacher Education 3 *unit(s)*
- PHYS 20 - Invitation to Physics and Astronomy 1 *unit(s)*
- PHYS 40 - Introduction to Computational Physics 3 *unit(s)*
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)
- PHYS 105A - Advanced Mechanics I 4 *unit(s)*
- PHYS 110A - Electricity and Magnetism I 3 *unit(s)*
- PHYS 120A - Electronics, Data Acquisition & Analysis 3 *unit(s)*
- PHYS 122 - Modern Physics 4 *unit(s)*
- PHYS 130 - Mathematical Methods in Physics 4 *unit(s)*
- SCED 273 - Secondary School Science 3 *unit(s)*
- SCED 175 - Classroom Experiences in Science Teaching 1 *unit(s)*
- Additional units of upper division physics 6 *unit(s)*

University Electives (5 units)

Total Units Required (120 units)

Statistics, BS

The Statistics, BS degree, offered by the Department of Mathematics and Statistics, is recommended for students who wish to pursue a career in statistics. This program also prepares students for graduate study in probability, statistics, and data science. The program is designed to address the high demand in statisticians, data analysts, and data scientists in the current job market. It provides rigorous and balanced education in statistics. Students enrolled in the program will receive a solid mathematical, statistics, and data analysis background; moreover, they will learn programming, data management, and communication skills.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements 47

Major Preparation	9-11
Major Requirements	61
University Electives	1-3
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Required in the Major must be completed with a grade of "C- or better", and the following Preparation for the Major course with a grade of "C or better": 100W.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)

- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (9-11 units)

Complete One 100W Course From:

- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- CS 100W - Technical Writing Workshop 3 *unit(s)* (WID)
- PHYS 100W - Methods of Research and Communication in Physics 3 *unit(s)* (WID)

Complete Two Courses:

- CS 46A - Introduction to Programming 4 *unit(s)*
 - CS 46B - Introduction to Data Structures 4 *unit(s)*
- OR**
- CMPE 30 - Programming Concepts and Methodology 3 *unit(s)*
 - CMPE 50 - Object-Oriented Concepts and Methodology 3 *unit(s)*

Major Requirements (61 units)

Lower Division Requirements (16 units)

- MATH 30 - Calculus I 3 *unit(s)* (B4)
MATH 30X may be used instead of MATH 30.
- MATH 31 - Calculus II 4 *unit(s)* (B4)
MATH 31X may be used instead of MATH 31.
- MATH 32 - Calculus III 3 *unit(s)* (B4)
MATH 32X may be used instead of MATH 32.
- MATH 39 - Linear Algebra I 3 *unit(s)*
- MATH 42 - Discrete Mathematics 3 *unit(s)*
MATH 42X may be used instead of MATH 42.

Upper Division Requirements (21 units)

- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- MATH 161C - Applied Probability and Statistics III 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*
- MATH 164 - Mathematical Statistics 3 *unit(s)*
- MATH 167PS - Introduction to Python Programming and SQL 3 *unit(s)*
- MATH 167R - Statistical Programming with R 3 *unit(s)*

Major Electives (24 units)

Complete 24 units from:

- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 151 - Object-Oriented Design 3 *unit(s)*
- MATH 108 - Introduction to Abstract Mathematics and Proofs 3 *unit(s)*
- MATH 132 - Advanced Calculus 3 *unit(s)*
- MATH 142 - Introduction to Combinatorics 3 *unit(s)*
- MATH 143C - Numerical Analysis and Scientific Computing 3 *unit(s)*
- MATH 143M - Numerical Analysis and Scientific Computing 3 *unit(s)*
- MATH 146 - An Introduction to Mathematical Cryptography 3 *unit(s)*
- MATH 151 - Fundamentals of Data Science 3 *unit(s)*
- MATH 162 - Statistics for Bioinformatics 3 *unit(s)*
- MATH 177 - Linear and Non-Linear Optimization 3 *unit(s)*
- MATH 180 - Individual Studies 1-4 *unit(s)* *
- MATH 188I - Student Internships 3 *unit(s)* **

**At most 3 units of any combination of Math 180, 180R and 180H may count towards degree requirements.*

Note: Math 180 and 180R have variable units. Math 180H is a 3-unit course.

***At most 3 units of Math 188i may count towards degree requirements.*

University Elective (1-3 units)

Total Units Required (120 units)

Undergraduate Minor(s)

Astronomy Minor

The Astronomy Minor offered by the Department of Physics and Astronomy requires completion of the physics and astronomy courses taken at San José State University with a grade of "C" (2.0 GPA) or better.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (21 units)

- PHYS 50 - General Physics I: Mechanics 4 unit(s) (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 unit(s) (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 unit(s) (B1+B3) (Or take PHYS 50 series equivalents)
- ASTR 117A - Astrophysics I 3 unit(s)
- ASTR 117B - Astrophysics II 3 unit(s)
- ASTR 155 - Topics in Modern Astrophysics 3 unit(s)

Total Units Required (21 units)

Atmospheric and Seismic Hazards Minor

This non-mathematical Minor in Atmospheric and Seismic Hazards, offered by the Department of Meteorology and Climate Science, is designed to increase student understanding of natural and man-made meteorological, geological and environmental hazards.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (13 units)

Required Courses (10 units)

- METR 112 - Global Climate Changes 3 unit(s) (R)
- METR 170A - Weather Briefing 1 unit(s) (Taken in the Fall Semester)
- GEOL 3 - Planet Earth 3 unit(s) (B1)

Complete One Course From:

- METR 10 - Weather and Climate 3 unit(s) (B1)
- METR 12 - Global Warming: Science and Solutions 3 unit(s) (B1)

Electives (3 units)

Please note: If a student is taking this minor as a requirement for their major, both courses may be required. Please see advisor for more details.

- METR 113 - Atmospheric Pollution 3 unit(s) (R)
- GEOL 112 - Hazards, Risks of Earthquakes and Volcanoes 3 unit(s) (R)

Total Units Required (13 units)

Bioinformatics Minor

Insights into many areas of biology, including genomics, molecular biology, neuroscience, physiology, microbiology, ecology, and evolution, can be gained using computational methods. Bioinformatics is the use of computational tools to understand important questions in the biological sciences. The Minor in Bioinformatics, offered by the Department of Biological Sciences, gives students a background in the biological sciences, computation skills, and experience using these skills to address biological questions. The minor requires 8 units of biology courses, 6 units of introductory courses in a programming language (either Python or Java), and 6 units of courses in bioinformatics.

At least 12 units must be distinct from the requirements of the student's major. At least six units must be completed at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0. A grade of "C-" or better is required for courses being used to meet any requirement in the minor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (20 units)

Lower Division (14 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2B3)
- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2B3)
- CS 22A - Python for Everyone 3 *unit(s)* (B4)
- CS 22B - Python Programming for Data Analysis 3 *unit(s)*

Upper Division (6 units)

- BIOL 123A - Bioinformatics I 3 *unit(s)*
- BIOL 123B - Bioinformatics II 3 *unit(s)*

Total Units Required (20 units)

Biological Sciences Minor

Environmental Studies students should consult an advisor from the Department of Biological Sciences.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

At least six (6) units, selected in consultation with the Biological Sciences Department advisor for minors, must be taken at San Jose State University.

- BIOL 20 - Ecological Biology 3 *unit(s)* (B2+B3)
- BIOL 21 - Human Biology 3 *unit(s)* (B2+B3)
- Ten to twelve (10-12) additional units in biological sciences courses of which six (6) units must be upper division 10-12 *unit(s)*

Total Units Required (18 units)

Broadcast Meteorology Minor

The Minor in Broadcast Meteorology, offered by the Department of Meteorology and Climate Science in collaboration with the School of Journalism and Mass Communications, is designed to prepare students from both STEM- and non-STEM majors to solve interdisciplinary problems involving the meteorology, climate and atmospheric sciences. Students will learn to prepare and present a professional weathercast with emphasis on communication skills, computer graphics, and on-camera delivery. Broadcast meteorology combines passions in weather, communications, technology applications, and reporting. Students in the minor will build meteorological knowledge and communication skills, which are essential for broadcast meteorology.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (22 units)

Core Courses (16 units)

- METR 10 - Weather and Climate 3 *unit(s)*
- METR 55 - Introduction to Broadcast Meteorology 3 *unit(s)*
- METR 100W **OR** MCOM 100W - Writing Workshop: Mass Communications 3 *unit(s)*
- METR 170A - Weather Briefing 1 *unit(s)*
- JOUR 130 - Student Media Apprentice 3 *unit(s)*
- JOUR 140A - Student Media Production: Update News 1-3 *unit(s)* (3 units required)

Electives (6 units)

- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- METR 112 - Global Climate Changes 3 *unit(s)* (R)
- METR 115 - Wildfire in the Earth System 3 *unit(s)* (R)

Total Units Required (22 units)

Chemistry Minor

A Chemistry Minor to accompany a major in some other field is offered by the Department of Chemistry. A Chemistry Minor is 11 units of core chemistry courses and 12 units of upper division chemistry courses taken at San José State University with a "C" (2.0) average or better. Students who pursue this Minor will gain a deeper understanding of chemistry as the central science bringing together all fields of physical science and providing insight into a wide array of applications from medicine to materials.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (23 units)

Core Courses (11 units)

- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 120S - Chemical Safety Seminar 1 *unit(s)*

Approved Chemistry Electives (12 units)

Approved courses from at least two areas beyond general chemistry, chosen from analytical chemistry, biochemistry, inorganic chemistry, organic chemistry and physical chemistry (including at least one lab course).

- CHEM 55 - Quantitative Analysis 2 *unit(s)*
- CHEM 55L - Quantitative Analysis Laboratory 2 *unit(s)*
- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- CHEM 130A - Biochemistry 4 *unit(s)*
- CHEM 130B - Biochemistry 4 *unit(s)*
- CHEM 131A - Biochemistry Lab 2 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*
- CHEM 145 - Inorganic Chemistry 3 *unit(s)*
- CHEM 155 - Instrumental Analysis 4 *unit(s)*
- CHEM 160 - Physical Chemistry 4 *unit(s)*
- CHEM 161A - Physical Chemistry 3 *unit(s)*
- CHEM 161B - Physical Chemistry 3 *unit(s)*
- CHEM 162L - Physical Chemistry Lab 2 *unit(s)*
- CHEM 170A - Macromolecular, Supramolecular & Nanoscale Systems 1 *unit(s)*

Total Units Required (23 units)

Climate Change Strategies Minor

The Minor in Climate Change Strategies, offered by the Department of Meteorology and Climate Science, is designed to increase students' understanding of climate change, potential impacts, and strategies to deal with what's coming.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Meteorology Courses (6 units)

Complete One Course From:

- METR 12 - Global Warming: Science and Solutions 3 *unit(s)*
- METR 112 - Global Climate Changes 3 *unit(s)*

Complete One Course From:

- METR 113 - Atmospheric Pollution 3 *unit(s)* (R)
- METR 115 - Wildfire in the Earth System 3 *unit(s)* (R)

Environmental Studies Courses (9 units)

- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- ENVS 130 - Energy Policy Analysis 3 *unit(s)*

Complete One Course From:

- ENVS 116 - Solar Energy Analysis 3 *unit(s)*
- ENVS 133 - Sustainable Energy Strategies 3 *unit(s)*

Total Units Required (15 units)

Computer Science Minor

At least 12 units must be distinct from the student's major. At least three units of upper-division coursework must be completed in the Department of Computer Science at SJSU. Students are expected to have satisfied the prerequisites for any of the courses taken to fulfill the requirements for the Computer Science Minor. A grade of "C-" or better is required for courses being used to meet any requirement in the minor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (3 units)

- MATH 42 - Discrete Mathematics 3 *unit(s)*

Minor Requirements (17 units)

Lower Division (8 units)

- CS 46A - Introduction to Programming 4 *unit(s)*
- CS 46B - Introduction to Data Structures 4 *unit(s)*

Upper or Lower Division Elective (3 units)

Complete one course from:

- MATH 30 - Calculus I 3 *unit(s)* (B4)
- CS 49C - Programming in C 3 *unit(s)* (Or any permitted Upper Division Elective)

Upper Division Electives (6 units)

Complete six units from:

- CS 123A - Bioinformatics I 3 *unit(s)*
- CS 131 - Processing Big Data - Tools and Techniques 3 *unit(s)*
- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 151 - Object-Oriented Design 3 *unit(s)*
- CS 174 - Server-side Web Programming 3 *unit(s)*

Total Units Required (20 units)

Geology Minor

The Department of Geology offers a baccalaureate minor to supplement a major in some fields. The geology minor consists of at least 15 units, at least six of which must be upper-division courses, selected in consultation with the geology advisor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Core Courses (9 units)

- GEOL 1 - General Geology 4 *unit(s)* (B1+B3)
- GEOL 7 - Earth, Time and Life 4 *unit(s)* (B1+B3)
- GEOL 28 - Geology Outdoors 1 *unit(s)*

Electives (6 units)

Complete six units from:

- GEOL 105 - General Oceanography 3 *unit(s)* (R)
- GEOL 107 - Prehistoric Life 3 *unit(s)* (R)
- GEOL 111 - Geology and the Environment 3 *unit(s)* (R)
- GEOL 112 - Hazards, Risks of Earthquakes and Volcanoes 3 *unit(s)* (R)
- GEOL 120 - Fundamentals of Mineralogy 3 *unit(s)*
- GEOL 122 - Petrology 4 *unit(s)*
- GEOL 124 - Sedimentology and Stratigraphy 3 *unit(s)* (R)
- GEOL 125 - Structural Geology 4 *unit(s)*
- GEOL 134 - Geomorphology 4 *unit(s)*
- GEOL 135 - Geochemistry 4 *unit(s)*
- GEOL 137 - Introduction to GPS/GIS for Geologic Applications 4 *unit(s)*
- GEOL 138 - Hydrogeology 4 *unit(s)*

- GEOL 142 - Paleontology 4 unit(s) (or other geology courses selected with advisor approval (at least one upper division course must include a lab))

Total Units Required (15 units)

Mathematics Minor

A grade of "C-" or better is required for courses being used to satisfy the requirements for the Minor in Mathematics, offered by the Department of Mathematics and Statistics.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (16 units)

Lower Division (10 units)

- MATH 30 - Calculus I 3 unit(s) (B4) (MATH 30X may be used instead of MATH 30.)
- MATH 31 - Calculus II 4 unit(s) (B4) (MATH 31X may be used instead of MATH 31.)

Complete One Course From:

- MATH 32 - Calculus III 3 unit(s) (B4) (MATH 32X may be used instead of MATH 32.)
- MATH 33LA - Differential Equations and Linear Algebra 3 unit(s)
- MATH 39 - Linear Algebra I 3 unit(s)
- MATH 42 - Discrete Mathematics 3 unit(s) (MATH 42X may be used instead of MATH 42.)

Upper Division Mathematics Electives (6 units)

6 units in upper division Mathematics numbered between 108 and 179 (inclusive) but excluding MATH 151 and those numbered between 160 and 169 (inclusive).

Total Units Required (16 units)

Physics Minor

A Physics Minor to accompany a major in some other field is offered by the Department of Physics and Astronomy. A Physics Minor is 18 units of physics courses taken at San José State University with a "C" (2.0) average or better.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University

Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)
- PHYS 51 - General Physics II: Electricity and Magnetism 4 *unit(s)* (B1+B3)
- PHYS 52 - General Physics III: Waves, Light, Heat 4 *unit(s)* (B1+B3)
- Six units of upper division physics or astronomy courses approved by Physics advisor including (up to four units combined) of PHYS 180 and/or 184, excluding PHYS 100W and ASTR 101 6 *unit(s)*

Total Units Required (18 units)

Science Content for Teaching Minor

The Science Education Minor, offered by the Science Education Program, is designed as a program of study that will allow students who are interested in becoming elementary and middle school teachers to satisfy the Introductory Science Authorization course work requirements of the California Commission on Teacher Credentialing.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Courses designated as "In Preparation for the Major" may be included in the minor. All prerequisite courses and expected proficiencies must be included in the course catalog description for the minor. Prerequisite courses will be included in the unit count. If there is a level of proficiency required to enter a minor (e.g., language or math proficiency), any courses to achieve proficiency will not be included in the minor unit count.

Minor Requirements

Consult with the Science Education Program.

Science Education Minor

The Science Education Minor, offered by the Science Education Program, is designed as a program of study that will allow students who are interested in becoming elementary and middle school teachers to satisfy the Introductory Science Authorization course work requirements of the California Commission on Teacher Credentialing.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (14 units)

- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- SCED 175 - Classroom Experiences in Science Teaching 1 *unit(s)* (*Must be completed 2 times for 2 units*)
- SCED 174 - Science Pedagogy for Learning Assistants 3 *unit(s)*
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)*

Complete one course (3 units):

- SCED 273 - Secondary School Science 3 *unit(s)*
Students interested in teaching high school science should take SCED 273 (open to seniors and post-baccalaureate students only; department consent is required) (Single Subject Credential).
- EDEL 108B - Curriculum: Science 3 *unit(s)*
Students interested in teaching elementary or middle school science should take EDEL 108B (open to seniors and post-baccalaureate students only; department consent is required) (Multiple Subject Credential).

Total Units Required (14 units)

Statistics Minor

The Statistics Minor, offered by the Department of Mathematics and Statistics, provides a theoretical and applied background in probability and statistics to prepare the students for statistical data analysis.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (7 Units)

- MATH 30 - Calculus I 3 *unit(s)* (B4) (*MATH 30X may be used instead of MATH 30.*)
- MATH 31 - Calculus II 4 *unit(s)* (B4) (*MATH 31X may be used instead of MATH 31.*)

Minor Requirements (12 units)

- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*

Complete One Course From:

- MATH 32 - Calculus III 3 *unit(s)* *(B4) (*MATH 32X may be used instead of MATH 32.*)
- MATH 39 - Linear Algebra I 3 *unit(s)* *

Elective Courses (6 units)

Complete six units from:

- MATH 151 - Fundamentals of Data Science 3 *unit(s)* **
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- MATH 161C - Applied Probability and Statistics III 3 *unit(s)*
- MATH 162 - Statistics for Bioinformatics 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*
- MATH 164 - Mathematical Statistics 3 *unit(s)*

Total Units Required (19 units)

*MATH 163 and MATH 164 require MATH 32; MATH 151 requires MATH 39.

**Students who select MATH 151 may be required to take an extra prerequisite course, MATH 167R.

Wildfire Sciences Minor

The Department of Meteorology and Climate Science offers a minor in Wildfire Sciences, which complements any career in which understanding wildfire science and wildfire risk is important. It is especially relevant to environmental and climate change related fields and prepares students to enter a workforce with wildfire-specific skill sets and knowledge. Nearly all employees in land management agencies and nonprofits in California are effectively working in wildfire or fire-related fields.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (20-22 units)

Required Courses (14 units)

- BIOL 111 - Fire Ecology 4 *unit(s)*
- ENVS 175 - Wildfire Policy and Management 3 *unit(s)*
- METR 115 - Wildfire in the Earth System 3 *unit(s)*

Geographic Information Systems (GIS)

Complete one of the following:

- ENVS 179A - Fundamentals of GIS for Urban Planning 4 *unit(s)*
- GEOL 137 - Introduction to GPS/GIS for Geologic Applications 4 *unit(s)*
- URBP 179A - Fundamentals of GIS for Urban Planning 4 *unit(s)*
- URBP 179B - Advanced GIS for Urban Planning 4 *unit(s)*
- Any other advisor approved GIS course

Electives (6-8 units)

Complete two elective courses from the following approved courses:

- BIOL 20 - Ecological Biology 3 *unit(s)*
- BIOL 150 - Field Studies in Natural History 1-2 *unit(s)*
- BOT 104 - Plant Taxonomy 4 *unit(s)*
- BOT 165 - Plant Communities of California 4 *unit(s)*
- BIOL 143 - Biogeography 3 *unit(s)*
- BIOL 156 - Ecological Sampling Design and Analyses 3 *unit(s)*
- BIOL 160 - Ecology 4 *unit(s)*
- BIOL 163 - Conservation Biology 3 *unit(s)*
- BIOL 164 - Ecological Field Methods 3 *unit(s)*
- BIOL 190 - Field Studies in Biology 1-4 *unit(s)*
- ENVS 161 - California Wildlands 4 *unit(s)*
- ENVS 173 - Forest Ecology and Conservation 4 *unit(s)*
- GEOG 1 - Physical Geography 3 *unit(s)*
- GEOG 181 - Introduction to Remote Sensing 3 *unit(s)*
- GEOL 6 - Geology of California 3 *unit(s)*
- METR 10 - Weather and Climate 3 *unit(s)*
- METR 112 - Global Climate Changes 3 *unit(s)*
- METR 113 - Atmospheric Pollution 3 *unit(s)*
- METR 155 - Remote Sensing 3 *unit(s)*
- METR 164 - Introduction to Fire Weather 3 *unit(s)*

Total Units Required (20-22 units)

Master(s)

Applied Mathematics, MS

- Requirements for Admission
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (33 units)
- Program Learning Outcomes

Applied Mathematics MS, offered by SJSU's Department of Mathematics and Statistics is appropriate for students who seek to deepen their knowledge of mathematics and its applications for work in the research and development area of industry.

Requirements for Admission

Candidates must meet all the university admission requirements. Students can be admitted in either classified or conditionally classified standing. If an applicant's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental requirements, the conditions will include taking preparatory courses to meet these requirements. Such courses will not count as units that fulfill the master's degree program requirements.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Classified Standing

To enter this program with classified standing, a student must meet the minimum requirements for admission to the Graduate Division, have completed 18 semester units of upper-division mathematics with a GPA of at least 3.0, and have one to three letters of recommendation submitted on his or her behalf. The coursework must be acceptable toward a bachelor's degree in mathematics and may not be counted toward the MS degree.

Conditionally Classified Standing

A student who meets the minimum requirements for admission to the Graduate Division but does not satisfy the mathematics coursework requirements stated above may be admitted as a conditionally classified student. Eligibility is determined on a case-by-case basis. The individual admission letter will explain the required terms and conditions for attaining classified standing. After arrival at SJSU, a conditionally accepted student must complete additional coursework to make up the unit deficiency in order to achieve classified status. These make-up units will not be included in the MS degree unit requirement total.

Requirements for Advancement to Graduate Candidacy

To advance to candidacy for the MS degree, a student must meet the university candidacy requirements, as stated in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

The student must complete the Petition for Advancement to Graduate Candidacy form. This form lists, among other things, all the coursework to be counted toward the master's degree. After the form has been signed by the student's thesis or writing project director (if applicable) and the Graduate Coordinator, it is forwarded to GAPE for final approval. Any subsequent changes to the student's program require approval from GAPE.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Program Graduation Requirements

Graduation Writing Assessment Requirement

Students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students must choose one of three options: The Plan A (Thesis), Plan B (Project), or Plan B (Comprehensive Examination).

Plan A (Thesis)

A student who selects the Thesis option must find a willing tenured or tenure-track faculty member to serve as the thesis advisor, and complete a thesis under that advisor's supervision. The thesis must be reviewed and approved by a committee composed of the advisor and two other faculty members chosen by the student in consultation with the advisor. The student must give a public presentation on the thesis, which is followed by an oral examination (defense) conducted by the committee. Theses must be filed with the Associate Dean of Graduate Studies, subject to the SJSU Master's Thesis and Doctoral Dissertation Guidelines and deadlines established by the College of Graduate Studies.

Thesis students must enroll in MATH 299 (3 units). Students receive credit when the thesis is completed, successfully defended, and all committee members have signed off on it. Students who do not complete their theses during the semester in which they are enrolled in MATH 299 will receive a grade of "RP" for that course. If all other degree requirements have been completed, students must subsequently enroll in MATH 1290R in compliance with university regulations until the thesis is completed, defended, and approved by the College of Graduate Studies.

Plan B (Project)

A student who selects the Project option must find a willing tenured or tenure-track faculty member to serve as the project advisor, and complete a written project under that advisor's supervision. The project must be reviewed and approved by a committee composed of the advisor and two other faculty members chosen by the student in consultation with the advisor. The student must give a public presentation on the project, which is followed by an oral examination (defense) conducted by the committee.

Students choosing the Plan B (Project) option must enroll in MATH 298 (3 units). Students receive credit when the writing project is completed, successfully defended, and all committee members have signed off on it. Students who do not complete their projects during the semester in which they are enrolled in MATH 298 will receive a grade of "RP" for that course. If all other degree requirements have been completed, students must subsequently sign up for MATH 1290R in compliance with university regulations until the writing project is completed and defended.

Plan B (Comprehensive Examination)

Students who select this option must pass two written comprehensive examinations. One examination will be in Numerical Analysis (MATH 243A and MATH 243M). The second exam will be in Differential Equations/Dynamical Systems (MATH 233A and MATH 234).

Students choosing the Plan B (Comprehensive Exam) option must enroll in an additional elective (3 units) selected in consultation with the program graduate advisor. Students complete the program Culminating Experience when they pass both exams. Students who successfully complete all other program requirements but not one or both exams must subsequently enroll in MATH 1290R for the following semester or semesters in compliance with the university requirement for continuous enrollment until both exams have been passed in one sitting.

Master's Requirements (33 units)

Core Courses (21 units)

- CS 200W - Graduate Technical Writing 3 *unit(s)* (GWAR)
- MATH 233A - Applied Mathematics I 3 *unit(s)*
- MATH 234 - Advanced Dynamical Systems 3 *unit(s)*
- MATH 243A - Numerical Solution of PDEs 3 *unit(s)*
- MATH 243M - Numerical Linear Algebra 3 *unit(s)*

Applied Mathematics

Select one of the following courses in consultation with the graduate advisor:

- MATH 203 - Applied Mathematics, Computation, and Statistics Projects 3 *unit(s)*
- MATH 285 - Advanced Topics in Mathematics 3 *unit(s)*
- MATH 288J - Applied Mathematics Internship 3 *unit(s)*

Statistics

Select one of the following courses in consultation with the graduate advisor:

- MATH 163 - Probability Theory 3 *unit(s)*
- MATH 261A - Regression Theory and Methods 3 *unit(s)*
- MATH 263 - Stochastic Processes 3 *unit(s)* (or another 200-level statistics course with consent of graduate advisor)

Electives (6 units)

Complete two courses from:

- MATH 229 - Advanced Matrix Theory 3 *unit(s)*
- MATH 238 - Advanced Complex Variables 3 *unit(s)*
- MATH 261A - Regression Theory and Methods 3 *unit(s)*
- MATH 263 - Stochastic Processes 3 *unit(s)*
- MATH 279A - Graph Theory 3 *unit(s)*
- MATH 279B - Advanced Graph Theory 3 *unit(s)*
- MATH 285A - Advanced Topics in Applied Mathematics 3 *unit(s)*
- MATH 297A - Preparation for Writing Project, Research Project or Thesis 3 *unit(s)*

Additional Electives (3 units)

Complete one 100-level or 200-level course selected in consultation with MS Mathematics Advisor. Elective courses may include a maximum of 3 units of MATH 280 and/or MATH 297A. Courses excluded are: MATH 100W, MATH 101, MATH 102, MATH 105, MATH 106, MATH 107A, MATH 107B, MATH 188I, MATH 201A, MATH 201B, and MATH 287.

Culminating Experience (3 units)

Plan A (Thesis)

- MATH 299 - Master's Thesis 1-4 *unit(s)* (3 *units required*)
- Oral Presentation
- Oral Defense

Plan B (Project)

- MATH 298 - Special Study 1-4 *unit(s)* (3 *units required*)
- Oral Presentation
- Oral Defense

Plan B (Comprehensive Exam)

- Additional 3-unit elective selected in consultation with graduate advisor
- Comprehensive Exam

Total Units Required (33 units)

Elective courses must be planned in consultation with the graduate advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 6.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Bioinformatics, MS

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (34 units)
- Program Learning Outcomes

The MS Bioinformatics, offered by the Department of Computer Science, features an interdisciplinary curriculum in bioinformatics, biology, computer science, and mathematics. Questions in many areas of biology, including genomics, molecular biology, neuroscience, physiology, microbiology, ecology, and evolution, must now be answered using mathematical and computational methods. New techniques allow the acquisition of many thousands or millions of biological measurements, and the field of bioinformatics has developed to address this need. The MS Bioinformatics program will provide students with an understanding of biological questions, a background in mathematics, and the computational skills necessary to address complex problems in the biological sciences. Students will also gain experience utilizing these skills to answer biological questions, including those with biomedical applications. The goal of the MS in Bioinformatics program is to prepare students for careers in the growing field of bioinformatics both in academia and in the biotechnology industry.

For more information, please visit the MS Bioinformatics website.

Admissions Requirements

University Admission

Candidates must apply through the CSU admissions portal, Cal State Apply, and meet all university admissions requirements. Applicants from countries in which the native language is not English or from countries with multiple native languages including English, must submit TOEFL scores. Minimum TOEFL scores acceptable for admission are 250 (Computer Based), 100 (Internet Based). Additional information about the TOEFL is on the Graduate Program Test Requirement webpage.

Admission to the Program

Candidates must meet all the university admission requirements. Students can be admitted in either classified or conditionally classified standing. To be admitted to classified standing, applicants must have a Bachelor's degree

from an accredited college or university in the biological or computational sciences or in engineering, a minimum GPA of 3.0 on a 4.0 scale, and completion of all program prerequisites listed on the admission requirements webpage. Two letters of recommendation from academic instructors or advisors are also required. Currently, GRE exam results are not required.

Students who meet the minimum university admission requirements can be conditionally classified if there is sufficient space in the program to accommodate them. Conditionally classified students will be required to complete undergraduate coursework and prerequisite coursework (listed in "Requirements for Admission to Classified Standing"), as directed by the graduate coordinators.

Requirements for Admission to Classified Standing

To enter this program with classified standing, a student must have a minimum 3.0 GPA in the last 60 units of required degree coursework and have completed each of the following courses with a grade of "C" or better:

- BIOL 30 - Principles of Biology I (4 units)
- BIOL 31 - Principles of Biology II (4 units)
- BIOL 115 - General Genetics (4 units)
- CS 22A - Python for Everyone (3 units)
- CS 22B - Python Programming for Data Analysis (3 units)
- MATH 30 - Calculus I (3 units)
- MATH 31 - Calculus II (4 units)
- MATH 161A - Applied Probability and Statistics I (3 units)

Requirements for Advancement to Candidacy

To be advanced to candidacy for the MS degree, a student must meet the university requirements for advancement to candidacy for the master's degree as outlined in the Graduate Policies and Procedures section. University requirements include completion of 9 letter-graded units with a GPA of at least 3.0 and satisfaction of the Graduation Writing Assessment Requirement (GWAR). The GWAR is met in this program by a "B" grade in CS 200W.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). *This requirement is satisfied by taking CS 200W.*

Culminating Experience

Under the direction of a Project Advisor, students will complete a culminating written project or thesis describing original bioinformatics research and formatted for publication in a professional journal, and will give an oral defense of their research to a committee. Students can choose one of three tracks for this project: Biological Sciences, Computer Science, and Mathematics. The Project Advisor must be a full-time tenured or tenure-track faculty member

in the department of the chosen track. The committee, which will evaluate the written project or thesis and the defense, will consist of the Project Advisor and two other members, one of whom must be a full-time tenured or tenure-track faculty member at SJSU. The research topic and the committee must be approved by the Bioinformatics Graduate Coordinator. Students will conduct their research while enrolled in at least 2 consecutive Culminating Experience courses in the department of their chosen track, with their Project Advisor as the instructor. Students in the Biological Sciences track will enroll in BIOL 297 while working on the research project and enroll in BIOL 298 the semester they complete the project. Students in the Computer Science track will take CS 297 followed by either CS 298 or CS 299. Students in the Mathematics track will take MATH 297A followed by MATH 298 or MATH 299.

Master's Requirements (34 units)

Core Courses (19 units)

- CS 123A **OR** BIOL 123A - Bioinformatics I 3 *unit(s)*
- CS 123B **OR** BIOL 123B - Bioinformatics II 3 *unit(s)*
- BIOL 205 - Advanced Molecular Techniques 4 *unit(s)*
- CS 200W - Graduate Technical Writing 3 *unit(s)* (GWAR)
- CS 223 - Advanced Bioinformatics 3 *unit(s)*
- MATH 162 - Statistics for Bioinformatics 3 *unit(s)*

Electives (9 units)

At least 6 units must be graduate level.

- BIOL 135A - Eukaryotic Cell and Molecular Biology I 3 *unit(s)*
- BIOL 135B - Eukaryotic Cell and Molecular Biology II 3 *unit(s)* (R)
- BIOL 215 - Seminar in Advanced Genetics 3 *unit(s)*
- BIOL 256 - Advanced Experimental Design and Analysis 3 *unit(s)*
- CHE 293 - Applied Bioinformatics 3 *unit(s)*
- CS 122 - Advanced Programming with Python 3 *unit(s)*
- CS 131 - Processing Big Data - Tools and Techniques 3 *unit(s)*
- CS 133 - Introduction to Data Visualization 3 *unit(s)*
- CS 218 - Topics in Cloud Computing 3 *unit(s)*
- CS 224 - Next Generation Sequencing & Genome Assembly 3 *unit(s)*
- CS 225 - Topics in Sequence-based Machine Learning for Bioinformatics 3 *unit(s)*
- CS 255 - Design and Analysis of Algorithms 3 *unit(s)*
- CS 256 - Topics in Artificial Intelligence 3 *unit(s)*
- CS 257 - Database System Principles 3 *unit(s)*
- CS 267 - Topics in Database Systems 3 *unit(s)*
- CS 271 - Topics in Machine Learning 3 *unit(s)*
- CS 280 - Graduate Individual Studies 1-3 *unit(s)*
- Other 100- or 200-level courses may be accepted only with prior program coordinator consent.

Culminating Experience (6 units)

Select **one** of the following tracks in consultation with the Graduate Advisor:

Biological Sciences Track (6 units)

- Select **one** of the following in consultation with the Graduate Advisor:
- BIOL 297 - Graduate Research *1-5 unit(s)*
- CS 297 - Preparation for Writing Project or Thesis *3 unit(s)*
- MATH 297A - Preparation for Writing Project, Research Project or Thesis *3 unit(s)*
- Additional Electives with advisor consent
- BIOL 298 - MS Project Culminating Experience *1 unit(s)*

Computer Science Track (6 units)

- CS 297 - Preparation for Writing Project or Thesis *3 unit(s)*
- CS 298 - Master's Writing Project *3 unit(s)*
or CS 299 - Master's Thesis 3 unit(s)

Mathematics Track (6 units)

- MATH 297A - Preparation for Writing Project, Research Project or Thesis *3 unit(s)*
- MATH 298 - Special Study *1-4 unit(s)*
or MATH 299 - Master's Thesis 3 unit(s)

Total Units Required (34 units)

Elective courses must be planned in consultation with one of the Graduate Coordinators.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 12.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of at least 3.0 in order to graduate.

Biological Sciences, Ecology and Evolution Concentration, MS

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The master's program in Biological Sciences with a concentration in Ecology and Evolution, offered by the Department of Biological Sciences, offers students training in the pursuit of rigorous scientific investigation with an emphasis on ecological and evolutionary processes. Students in this degree program emphasize botany, entomology, zoology, or conservation biology through the choice of advisor, committee, course work, and thesis or project. Our graduates have an excellent grasp of the theory and application of ecological and evolutionary principles.

In addition, students with our degree will have gained experience in critical thinking, problem-solving, research methodology (e.g., experimental design, sampling techniques, and analysis), and both written and oral communication. Our alumni are successful applicants for doctoral degree programs and generally attain high-level academic and non-academic positions in both the private and public sectors.

For more information visit the SJSU Biological Sciences website.

Admissions Requirements

Candidates must meet all the university admission requirements. In addition, applicants must upload a personal statement, resume, and two letters of recommendation in the Cal State Apply admissions portal. **Applicants must also be accepted by a tenured or tenure-track faculty member in the Department of Biological Sciences prior to acceptance by the program.** It is the student's responsibility to contact any potential faculty advisors. For complete details on the student approval process, please visit the Biological Sciences Graduate Programs website.

Students can be admitted in either classified or conditionally classified standing. Conditional acceptance means that the candidate must fulfill specific requirements in order to be eligible to apply for advancement to candidacy. These conditions will be stipulated as part of the acceptance agreement between the faculty advisor and the applicant. Failure to fulfill these requirements will result in disqualification from the program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Advancement to Graduate Candidacy

Each semester, students should consult with their graduate advisor to develop a schedule of courses. Students admitted as conditionally classified must satisfy the requirements listed in their acceptance agreement before advancing to candidacy. Students who have achieved classified standing in the master's degree curriculum must next advance to candidacy for the degree. A student may advance to candidacy after completing a minimum of 9 units of letter-graded work as a graduate student in 100- or 200-level courses acceptable to the department as well as fulfilling the other university requirements for advancement to candidacy, as detailed in the Graduate Policies and Procedures section. Candidacy includes successful completion of the Graduation Writing Assessment Requirement (GWAR), which is satisfied in this degree by completion of BIOL 202 with a grade of "B" or higher.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS Biological Sciences, Concentration in Ecology and Evolution, Graduation Requirements

As shown below, the program consists of 30 semester units of approved work. The student consults with his or her advisor to select a thesis or project topic.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

A grade of "B" or better in BIOL 202 will satisfy the graduate competency in writing requirement.

Culminating Experience Requirements

Plan A (Thesis)

Thesis: The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. The MS thesis document must be approved by the student's thesis research committee before submission. Typically, the thesis committee will provide the candidate feedback during the Thesis Defense and may request changes to the thesis before final approval.

Oral Thesis Defense: All MS candidates are required to present a public seminar based on their research project.

Plan B (Project)

Written Project: The written project must be a manuscript describing the student's research project, written following a professional journal's format for submission. It will be written under the guidance of the candidate's graduate committee chair with the assistance of their graduate committee. The manuscript must be approved by the student's graduate committee. Typically, the committee will provide the candidate feedback during the Project Defense and may request changes to the manuscript before final approval.

Oral Project Defense: All MS candidates are required to present a public seminar based on their research project.

Master's Requirements (30 units)

Core Courses (15 units)

- BIOL 201 - Graduate Seminar in Biological Sciences 1 unit(s)
- BIOL 202 - Graduate Studies in Biology 3 unit(s) (GWAR)
- BIOL 220 - Science Communication 3 unit(s)
- BIOL 297 - Graduate Research 1-4 unit(s) (Students take a total of 8 core units of this class.)

Concentration Courses (9 units)

- BIOL 218 - Advanced Evolution 3 unit(s)
- BIOL 256 - Advanced Experimental Design and Analysis 3 unit(s)
- BIOL 255E - Advanced Topics: Ecology and Evolution 1-4 unit(s) (3 units required)

Electives (5 units)

Elective courses must be planned in consultation with the Graduate Advisor.

- BIOL 255E - Advanced Topics: Ecology and Evolution 1-4 unit(s)
- BIOL 255L - Advanced Biology Laboratory 1-4 unit(s)
- BIOL 255M - Advanced Topics: Molecular & Microbiology 1-4 unit(s)
- BIOL 255P - Seminar in Advanced Biology: Physiology 1-4 unit(s)
- 100- or 200-level courses chosen with advisor consent

Culminating Experience (1 unit)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- BIOL 299 - Master's Thesis 1-4 unit(s) (1 unit required)
- Seminar- Thesis Defense

Plan B (Project)

- BIOL 298 - MS Project Culminating Experience 1 unit(s)
- Seminar- Project Defense

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

At least 60% of the units applying toward the degree must be letter-graded coursework.

A public seminar on the thesis or project must be given.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Biological Sciences, MA

- Admission Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The MA in Biological Sciences, offered by the Department of Biological Sciences, offers students broad training in areas of science that may include general biology, plant biology, cell biology, ecology, entomology, genetics, microbiology, immunology, systems physiology, toxicology, zoology, or, under special circumstances, marine biology. Students with an MA in Biological Sciences go on to careers in research, biotechnology, medical and health sciences, and teaching.

For more information visit the SJSU Biological Sciences website.

Admissions Requirements

Candidates must apply through the CSU admissions portal, Cal State Apply, and meet all university admission requirements.

In addition, applicants must upload a personal statement, resume, and two letters of recommendation in the Cal State Apply admissions portal.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. The program does not currently require the GRE for admission.

Note: Applicants' admission into the program is contingent upon their being accepted by a tenured or tenure-track faculty member in the Department of Biological Sciences who will become their major advisor. Applicants must contact the graduate coordinator.

Requirements for Admission to Classified Standing

Students can be admitted in either classified or conditionally classified standing. To be admitted to the MA in Biological Sciences program in Classified status, an applicant must meet all of the minimum university and departmental requirements for admission.

Admission to Conditionally Classified Standing

If an applicant's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental and/or faculty requirements, the conditions will include passing additional courses (specified by the student's major advisor) in the first semester of the program with a grade of B or better. The program admissions letter will explain terms and requirements.

Requirements for Advancement to Candidacy

Each semester, students should consult with their graduate advisor to develop a schedule of courses. Students admitted as conditionally classified must satisfy the requirements listed in their acceptance agreement before advancement to candidacy. Students who have completed matriculation and achieved classified standing in the master's degree curriculum must next advance to candidacy for the degree. A student may advance to candidacy after completing a minimum of 9 units of graded work as a graduate student in letter-graded 100- or 200- level courses acceptable to the department as well as fulfilling the other university requirements for advancement to candidacy, as detailed in the Graduate Policies and Procedures section. Candidacy includes successful completion of the Graduation Writing Assessment Requirement (GWAR), which is satisfied in this degree by the completion of BIOL 202 with a "B" or higher.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

A grade of "B" or better in BIOL 202 will satisfy the graduate competency in writing requirement.

Culminating Experience

Students in the MA, Biological Sciences may complete the program Culminating Experience through either a comprehensive exam or graduate project. Students who have advanced to candidacy, and who have completed or are in the final semester of completing the 30 units of required coursework will choose, in consultation with their major advisor, one of two options for their Culminating Experience. The program does not offer a thesis option.

Plan B (Comprehensive Exam)

Students choosing the Plan B (Comprehensive Exam) will enroll in BIOL 298M, and successfully complete the written exam, followed by an oral exam as their culminating experience. The advising committee determines the format of the written and oral exams. Once the written portion of the exam is passed, students take a two- to three-hour oral examination. Successful completion of both exams is required for the award of the MA Biological Sciences degree. Students who are not successful in their first attempt will have one opportunity to retake one or both exams. Written and oral exams will include material from graduate-level coursework taken by the student. Successful completion of both the written and oral exams is determined by a majority vote of the student's graduate committee.

Plan B (Project)

The student choosing the Plan B (Project) must enroll in the 1-unit BIOL 298M and complete a research project that has been approved and supervised by their major advisor. This culminating experience option requires students to complete a written report in the style of a manuscript for publication that describes the project and to deliver an oral presentation describing the project to the advising committee. Research projects for the MA Biological Sciences are typically 1-2 semesters in duration. Successful completion of both the manuscript and the oral presentation is determined by a majority vote of the student's graduate committee.

As shown below, the program consists of 30 semester units of approved work. The student consults with his or her advisor to select coursework.

Master's Requirements (30 units)

Core Courses (15 units)

- BIOL 201 - Graduate Seminar in Biological Sciences *1 unit(s) (2 units required)*
- BIOL 202 - Graduate Studies in Biology *3 unit(s) (GWAR)*

Foundations in Biology (3 units)

Complete one course:

- BIOL 215 - Seminar in Advanced Genetics *3 unit(s)*
- BIOL 218 - Advanced Evolution *3 unit(s)*
- BIOL 230 - Comparative Animal Physiology *3 unit(s)*

Current Trends in Biology (3 units)

Complete one course:

- BIOL 255E - Advanced Topics: Ecology and Evolution *1-4 unit(s)*
- BIOL 255M - Advanced Topics: Molecular & Microbiology *1-4 unit(s)*
- BIOL 255P - Seminar in Advanced Biology: Physiology *1-4 unit(s)*

Supervised Studies (4 units)

Complete 4 units:

- BIOL 280 - Master's Individual Studies *1-3 unit(s)*
- BIOL 284 - Master's Directed Reading *1-3 unit(s)*

Electives (14 units)

Students may enroll in a maximum combination of 4 units in BIOL 280 and BIOL 284.

- BIOL 205 - Advanced Molecular Techniques 4 *unit(s)*
- BIOL 215 - Seminar in Advanced Genetics 3 *unit(s)*
- BIOL 218 - Advanced Evolution 3 *unit(s)*
- BIOL 220 - Science Communication 3 *unit(s)*
- BIOL 227 - Advanced Physiology 3 *unit(s)*
- BIOL 233 - Immunological Techniques 3 *unit(s)*
- BIOL 230 - Comparative Animal Physiology 3 *unit(s)*
- BIOL 255E - Advanced Topics: Ecology and Evolution 1-4 *unit(s)*
- BIOL 255L - Advanced Biology Laboratory 1-4 *unit(s)*
- BIOL 255M - Advanced Topics:Molecular & Microbiology 1-4 *unit(s)*
- BIOL 255P - Seminar in Advanced Biology: Physiology 1-4 *unit(s)*
- BIOL 256 - Advanced Experimental Design and Analysis 3 *unit(s)*
- BIOL 280 - Master's Individual Studies 1-3 *unit(s)*
- BIOL 284 - Master's Directed Reading 1-3 *unit(s)*
- 100- or 200-level courses chosen with advisor consent

Culminating Experience (1 unit)

Choose One Option:

Plan B (Project)

- BIOL 298M - MA Culminating Experience 1 *unit(s)*
- Seminar - Project Defense

Plan B (Comprehensive Exam)

- BIOL 298M - MA Culminating Experience 1 *unit(s)*
- Comprehensive Written Examination
- Comprehensive Oral Examination

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

At least 60% of the units applying toward the degree must be letter-graded coursework.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Biological Sciences, Molecular Biology and Microbiology Concentration, MS

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science program in Biological Sciences with a concentration in Molecular Biology and Microbiology, offered by the Department of Biological Sciences, offers students training in the pursuit of rigorous scientific investigation with an emphasis on discovering the molecular mechanisms that underlie biological processes such as behavior, cell biology, immunology, microbial diversity, microbial engineering, pathogenesis, and neural development. During their research experience, students acquire the skills necessary to successfully address a variety of research questions under the guidance of faculty.

In addition, students with our degree will have gained experience in critical thinking, problem-solving, research methodology (e.g., experimental design, sampling techniques, and analysis), and both written and oral communication. Our alumni are successful applicants for doctoral degree programs and generally attain high level academic and non-academic positions in both the private and public sectors.

For more information visit the SJSU Biological Sciences website.

Admissions Requirements

Candidates must meet all the university admission requirements. In addition, applicants must upload a personal statement, resume, and two letters of recommendation in the Cal State Apply admissions portal. **Applicants must also be accepted by a tenured or tenure-track faculty member in the Department of Biological Sciences prior to acceptance by the program.** It is the student's responsibility to contact any potential faculty advisors. For complete details on the student approval process, please visit the Biological Sciences Graduate Programs.

Students can be admitted in either classified or conditionally classified standing. Conditional acceptance means that the candidate must fulfill specific requirements in order to be eligible to apply for advancement to candidacy. These conditions will be stipulated as part of the acceptance agreement between the faculty advisor and the applicant. Failure to fulfill these requirements will result in disqualification from the program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Advancement to Graduate Candidacy

Each semester, students should consult with their graduate advisor to develop a schedule of courses. Students admitted as conditionally classified must satisfy the requirements listed in their acceptance agreement before advancing to candidacy. Students who have achieved classified standing in the master's degree curriculum must next advance to candidacy for the degree. A student may advance to candidacy after completing a minimum of 9 units of letter-graded work as a graduate student in 100- or 200-level courses acceptable to the department as well as fulfilling the other university requirements for advancement to candidacy, as detailed in the Graduate Policies and Procedures section. Candidacy includes successful completion of the Graduation Writing Assessment Requirement (GWAR), which is satisfied in this degree by the completion of BIOL 202 with a grade of "B" or better.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS Biological Sciences, Concentration Molecular Biology and Microbiology, Graduation Requirements

As shown below, the program consists of 30 semester units of approved work. The student consults with his or her advisor to select a thesis or project topic.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

A grade of "B" or better in BIOL 202 will satisfy the graduate competency in writing requirement.

Culminating Experience Requirements

Plan A (Thesis)

Thesis: The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. The MS thesis document must be approved by the student's thesis research committee before submission. Typically, the thesis committee will provide the candidate feedback during the Thesis Defense and may request changes to the thesis before final approval.

Oral Thesis Defense: All MS candidates are required to present a public seminar based on their research project.

Plan B (Project)

Written Project: The written project must be a manuscript describing the student's research project, written following a professional journal's format for submission. It will be written under the guidance of the candidate's graduate committee chair with the assistance of their graduate committee. The manuscript must be approved by the student's graduate committee. Typically, the committee will provide the candidate feedback during the Project Defense and may request changes to the manuscript before final approval.

Oral Project Defense: All MS candidates are required to present a public seminar based on their research project.

Master's Requirements (30 units)

Core Courses (15 units)

- BIOL 201 - Graduate Seminar in Biological Sciences 1 unit(s)
- BIOL 202 - Graduate Studies in Biology 3 unit(s) (GWAR)
- BIOL 220 - Science Communication 3 unit(s)
- BIOL 297 - Graduate Research 1-4 unit(s) (Students take a total of 8 core units of this class.)

Concentration Courses (9 units)

- BIOL 205 - Advanced Molecular Techniques 4 unit(s)

- BIOL 215 - Seminar in Advanced Genetics 3 *unit(s)*
- BIOL 255M - Advanced Topics:Molecular & Microbiology 1-4 *unit(s)* (*Students take at least 2 units of this class*)

Electives (5 units)

Elective courses must be planned in consultation with the Graduate Advisor

- BIOL 233 - Immunological Techniques 3 *unit(s)*
- BIOL 255L - Advanced Biology Laboratory 1-4 *unit(s)*
- BIOL 255M - Advanced Topics:Molecular & Microbiology 1-4 *unit(s)*
- Other 100- or 200-level courses chosen with advisor consent

Culminating Experience (1 unit)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- BIOL 299 - Master's Thesis 1-4 *unit(s)* (1 *unit* required)
- Seminar- Thesis Defense

Plan B (Project)

- BIOL 298 - MS Project Culminating Experience 1 *unit(s)*
- Seminar- Project Defense

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

At least 60% of the units applying toward the degree must be letter-graded coursework.

A public seminar on the thesis or project must be given.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Biological Sciences, Physiology Concentration, MS

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The master's program in Biological Sciences with a concentration in Physiology, offered by the Department of Biological Sciences, offers students training in the pursuit of rigorous scientific investigation with an emphasis on the

integrative nature of physiology across levels of organization from molecule to organism. During their research experience, students acquire the skills necessary to successfully address a variety of research questions under the guidance of faculty.

In addition, students with our degree will have gained experience in critical thinking, problem-solving, research methodology (e.g., experimental design, sampling techniques, and analysis), and both written and oral communication. Our alumni are successful applicants for doctoral degree programs and generally attain high level academic and non-academic positions in both the private and public sectors.

For more information visit the SJSU Biological Sciences website

Admissions Requirements

Candidates must meet all the university admission requirements. In addition, applicants must upload a personal statement, resume, and two letters of recommendation in the Cal State Apply admissions portal. **Applicants must also be accepted by a tenured or tenure-track faculty member in the Department of Biological Sciences prior to acceptance by the program.** It is the student's responsibility to contact any potential faculty advisors. For complete details on the student approval process, please visit the Biological Sciences Graduate Programs website.

Students can be admitted in either classified or conditionally classified standing. Conditional acceptance means that the candidate must fulfill specific requirements in order to be eligible to apply for advancement to candidacy. These conditions will be stipulated as part of the acceptance agreement between the faculty advisor and the applicant. Failure to fulfill these requirements will result in disqualification from the program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Advancement to Graduate Candidacy

Each semester, students should consult with their graduate advisor to develop a schedule of courses. Students admitted as conditionally classified must satisfy the requirements listed in their acceptance agreement before advancing to candidacy. Students who have achieved classified standing in the master's degree curriculum must next advance to candidacy for the degree. A student may advance to candidacy after completing a minimum of 9 units of letter-graded work as a graduate student in 100- or 200-level courses acceptable to the department as well as fulfilling the other university requirements for advancement to candidacy, as detailed in the Graduate Policies and Procedures section. Candidacy includes successful completion of the Graduation Writing Assessment Requirement (GWAR), which is satisfied in this degree by the completion of BIOL 202 with a grade of "B" or better.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MS - Biological Sciences, Concentration in Physiology, Graduation Requirements

As shown below, the program consists of 30 semester units of approved work. The student consults with his or her advisor to select a thesis or project topic.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

A grade of 'B' or better in BIOL 202 will satisfy the graduate competency in writing requirement.

Culminating Experience Requirements

Plan A (Thesis)

Thesis: The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. The MS thesis document must be approved by the student's thesis research committee before submission. Typically, the thesis committee will provide the candidate feedback during the Thesis Defense and may request changes to the thesis before final approval.

Oral Thesis Defense: All MS candidates are required to present a public seminar based on their research project.

Plan B (Project)

Written Project: The written project must be a manuscript describing the student's research project, written following a professional journal's format for submission. It will be written under the guidance of the candidate's graduate committee chair with the assistance of their graduate committee. The manuscript must be approved by the student's graduate committee. Typically, the committee will provide the candidate feedback during the Project Defense and may request changes to the manuscript before final approval.

Oral Project Defense: All MS candidates are required to present a public seminar based on their research project.

Master's Requirements (30 units)

Core Courses (15 units)

- BIOL 201 - Graduate Seminar in Biological Sciences 1 unit(s)
- BIOL 202 - Graduate Studies in Biology 3 unit(s) (GWAR)
- BIOL 220 - Science Communication 3 unit(s)
- BIOL 297 - Graduate Research 1-4 unit(s) (Students take a total of 8 core units of this class.)

Concentration Courses (9 units)

- BIOL 227 - Advanced Physiology 3 unit(s)
- BIOL 230 - Comparative Animal Physiology 3 unit(s)
- BIOL 255P - Seminar in Advanced Biology: Physiology 1-4 unit(s) (Students take at least 3 units of this course.)

Electives (5 units)

Elective courses must be planned in consultation with the Graduate Advisor.

- BIOL 255E - Advanced Topics: Ecology and Evolution 1-4 unit(s)
- BIOL 255L - Advanced Biology Laboratory 1-4 unit(s)
- BIOL 255M - Advanced Topics:Molecular & Microbiology 1-4 unit(s)

- BIOL 255P - Seminar in Advanced Biology: Physiology 1-4 unit(s)
- 100- or 200-level courses chosen with advisor consent

Culminating Experience (1 unit)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- BIOL 299 - Master's Thesis 1-4 unit(s) (1 unit required)
- Seminar- Thesis Defense

Plan B (Project)

- BIOL 298 - MS Project Culminating Experience 1 unit(s)
- Seminar- Project Defense

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

At least 60% of the units applying toward the degree must be letter-graded coursework.

A public seminar on the thesis or project must be given.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Biotechnology, MBT

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (36 units)
- Program Learning Outcomes

The Master of Biotechnology (MBT) program, offered by the Department of Biological Sciences, integrates advanced, hands-on training in laboratory-based molecular biology courses with MBA-level business courses from the College of Business. The core courses provide an introduction to aspects of the biotechnology industry including drug development, marketing, finance, and intellectual property. The required internship experience allows the students to apply what they have learned in real-world settings.

Through elective choices, students supplement the core program with additional hands-on science or MBA courses in support of their career goals. MBT program graduates are highly trained individuals who have had direct exposure to the biotechnology corporate world and are ready to make immediate contributions to biotechnology companies. Graduates work in a variety of positions in research, product development, marketing, regulatory affairs, clinical affairs, project management, quality, and others.

For more information visit the SJSU Master of Biotechnology website.

Admissions Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system at calstate.edu/apply and meet all the university admission requirements. Applicants must submit additional supporting documents including a resume separately to the department to obtain admission into the Master in Biotechnology degree program. See the graduate admissions requirements website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Admission to the Program

Applicants must submit an official transcript (for international WES evaluated transcript), English-language proficiency test (if applicable), statement of purpose, resume, GRE or waiver, and 2 letters of recommendation to the university. Potential candidates will be interviewed during the spring semester. Admission is based on the acceptance to the university and the outcome of the interview.

Requirements for Advancement to Candidacy

All students will submit their Advancement to Candidacy petitions during the fall of their second year, after having fulfilled all University requirements for advancement to candidacy, as detailed in the Graduate Policies and Procedures section. Candidacy includes successful completion of the Graduation Writing Assessment Requirement (GWAR), which is satisfied in this degree by the completion of BIOL 202TA and BIOL 202TB with grades of "B" or higher.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Requirements

The Master of Biotechnology program consists of 36 semester units of approved work. It includes a 2-unit internship in the biotechnology industry.

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional and Continuing Education (PaCE). Registration and enrollment in a Special Session course or program must use the special session application form and will follow the special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the Biotechnology website for more information.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing BIOL 202TA and BIOL 202TB.

Culminating Experience

Plan B (Project)

The culminating experience is the Biotechnology Colloquium (BIOL 285T), which includes the preparation of a business plan for a biotechnology startup company.

Master's Requirements (36 units)

Core Courses (29 units)

- BIOL 202TA - Biotech Seminar: Biotech Products 3 *unit(s)* (GWAR)
- BIOL 202TB - Biotech Seminar: Drug Development Process 3 *unit(s)* (GWAR)
- BIOL 202TC - Biotech Seminar: Biotech Business I 2 *unit(s)*
- BIOL 202TD - Biotech Seminar: Biotech Business II 2 *unit(s)*
- BIOL 205T - Advanced Molecular Techniques for Biotechnology 4 *unit(s)*
- BIOL 280T - Internship in the Biotechnology Industry 2 *unit(s)*
- BIOL 282C - Biotechnology Company Management 3 *unit(s)*
- BUS 282A - Essentials of Management and Organizational Behavior 3 *unit(s)*
- BUS 282B - Essentials of Operations Management 3 *unit(s)*

Complete One Course From:

- BIOL 221T - Advanced Bioinformatics for Biotechnology 4 *unit(s)*
- BIOL 255T - Introduction to Stem Cell Techniques 4 *unit(s)*

Electives (6 units)

Students must take any two of the following 200-level science and/or business courses:

Science Electives

- BIOL 227T - Principles of Pharmacology 3 *unit(s)*
- BIOL 233T - Immunological Techniques for Biotechnology 3 *unit(s)*
- BIOL 283T - Topics in Biotech Regulatory Affairs 3 *unit(s)*
- BIOL 281T - Individual Studies in Biotechnology 1-4 *unit(s)*

Business Electives

- 200-level MBA for Professional course chosen in consultation with the Program Director

Culminating Experience (Plan B) (1 unit)

- BIOL 285T - Colloquium in Biotechnology 1 unit(s)

Total Units Required (36 units)

Elective courses must be planned in consultation with the Graduate Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Chemistry, MA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The MA Chemistry degree is designed for persons who seek to augment and enhance their knowledge of chemistry beyond the bachelor's level. It is intended for (1) those who are interested in teaching chemistry at community colleges, (2) high school teachers who are currently certified and have teaching experience, (3) those who are interested in chemical sales, technical librarianship, and scientific writing, or (4) those who already have a significant amount of research experience. The MA degree is not recommended to those who wish to conduct or direct chemical research and have no previous research experience in the private sector.

For more information visit the Chemistry Department's Graduate Programs webpage.

Admissions Requirements

The applicant must apply to and be admitted by both San José State University and the Department of Chemistry. Check the SJSU graduate admissions requirements website and the Chemistry Department website for the most up-to-date instructions.

Admission to the University

Applicants are admitted to the program by the Chemistry Department Graduate Advisor after they have been admitted to the graduate school by the university. University admission requirements include a bachelor's degree (or equivalent), a minimum 2.5 GPA, and good standing at the last college or university attended. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Admission to the Chemistry Department

The Chemistry Department requires that the bachelor's degree be in chemistry or intimately related science (e.g., chemical physics, biochemistry, materials science). In all cases, however, incoming students must have had the equivalent of 40 semester units of undergraduate chemistry including at least 10 units of general chemistry, 10 units of organic chemistry, 4 units of analytical chemistry, and 4 units of physical chemistry. A grade point average of 3.0 or

higher for the chemistry coursework is preferred. In addition, admission to the Chemistry MA program requires at least two, but preferably three, letters of recommendation.

Admissions Status

Admission may be with graduate classified standing, which means that the student is deemed qualified to enroll in the graduate curriculum. In some cases, students are admitted with conditionally classified standing, which means that they must complete specified prerequisite work and/or graduate work with acceptable grades before they can be moved to classified status. Students with conditionally classified status should complete the conditions of their acceptance as early as possible. Such students may take graduate courses at the same time they are fulfilling the conditions. Prerequisite work is assigned for one or more of the following reasons: (1) low chemistry course GPA in undergraduate work, (2) insufficient number of undergraduate units in chemistry, or (3) lack of coursework in particular areas of study. In order to change from conditionally classified to classified standing, a student must (1) fulfill the conditions, and (2) obtain the Graduate Advisor's signature on the Change of Classification in Graduate Program form. Only students in classified standing may petition for advancement to candidacy, a requirement for graduation.

Requirements for Advancement to Graduate Candidacy

After approximately two semesters of coursework and completion of a preliminary seminar based on a proposed, faculty-guided research project, students may apply for advancement to graduate candidacy for the MA degree. In addition, the student must have graduate classified status and must have completed CHEM 100W for the Graduation Writing Assessment Requirement (GWAR). The Preliminary Seminar Guidelines and Evaluation form may be found on the Chemistry Department Forms webpage. The 30-unit Proposed Graduate Degree Program is written by the Graduate Advisor in consultation with the student and entered on the Advancement to Graduate Candidacy form, which must be approved and signed by the Graduate Advisor. Students cannot enroll in CHEM 299 - Master's Thesis or apply for graduation until they are official candidates for a degree. See the Graduate Policies and Procedures section for further details regarding university requirements for advancement to candidacy for the master's degree.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Program Graduation Requirements

Note that the coursework requirements for the MA degree differ from the requirements for the MS degree in Chemistry. In addition to completing the 30 units of coursework listed on the approved candidacy form, an MA degree candidate in Chemistry must complete the following activities as part of their culminating experience:

Final Seminar

All MA candidates are required to present a departmental seminar based on their research project. The seminar is scheduled through the faculty instructor for CHEM 285 and, therefore, must take place during the fall or spring semester.

Final Oral Examination

All MA candidates are required to pass a Final Oral Examination based on the research project as detailed in the thesis. The Final Oral Examination is administered by the thesis committee, and the candidate must provide the committee with a copy of the thesis for review at least two weeks prior to the exam date. The final exam may be scheduled on the same date as the Final Seminar if the two-week thesis delivery requirement is met.

Thesis (Plan A)

The MA thesis document must be approved by the student's thesis research committee before submission. Typically, the thesis committee will provide the candidate feedback during the Final Oral Examination and may request changes to the thesis before final approval. See the most current version of the SJSU Master's Thesis and Doctoral Dissertation Guidelines and the submission deadlines set by the College of Graduate Studies.

Master's Requirements (30 units)

Graduation Writing Assessment Requirement

Students must pass the Graduation Writing Assessment Requirement (GWAR). *This requirement is satisfied in the core courses.*

Core Courses (21 units)

- CHEM 100W - Writing Workshop: Chemical Communications 3 unit(s) (GWAR)
If CHEM 100W was completed for an undergraduate degree, three additional units of electives must be substituted
- CHEM 120S - Chemical Safety Seminar 1 unit(s)
- CHEM 285 - Seminar 0.5 unit(s) (2 units required - complete course 4 times)
- CHEM 297 - MA Special Study 1-3 unit(s) (3 units required)
- Preliminary Seminar Presentation

Chemistry 200-Level Courses (12 units)

Complete 12 units of 200-level Chemistry courses.

Electives (7 units)

- Any 200-level CHEM course or any 100-level CHEM course with graduate advisor consent; one of the electives must be an advanced chemistry laboratory course

Culminating Experience (2 units)

(Plan A only)

- CHEM 299 - Master's Thesis 1-6 unit(s) (2 units required)

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Chemistry, MS

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The MS Chemistry degree is designed for persons who seek greater competency in chemical research or for those who want an introduction to graduate work before starting a program for the PhD degree. Emphasis is placed upon, but not limited to, training in advanced laboratory techniques, operation of state-of-the-art instruments, data acquisition and interpretation, and strategies involved in designing and conducting research in chemistry.

For more information visit the Chemistry Department's Graduate Programs webpage.

Admissions Requirements

The applicant must apply to and be admitted by both San José State University and the Department of Chemistry. Check the SJSU graduate admissions requirements website and the Chemistry Department website for the most up-to-date instructions.

Admission to the University

Students are admitted to the program by the Chemistry Department Graduate Advisor after they have been admitted to the graduate school by the university. University admissions requirements include a bachelor's degree (or equivalent), a minimum 2.5 GPA, and good standing at the last college or university attended. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Admission to the Chemistry Department

The Department of Chemistry requires further that the bachelor's degree be in chemistry or an intimately related science (e.g., chemical physics, biochemistry, or materials science). In all cases, however, incoming students must have had the equivalent of 40 semester units of undergraduate chemistry including at least 10 units of general chemistry, 10 units of organic chemistry, 4 units of analytical chemistry, and 4 units of physical chemistry. A grade point average of 3.0 or higher for the chemistry coursework is preferred. In addition, admission to Chemistry requires at least two, but preferably three, letters of recommendation.

Admissions Status

Admission may be with graduate classified standing, which means that the student is deemed qualified to enroll in the graduate curriculum. In some cases, students are admitted with conditionally classified standing, which means that they must complete specified remedial work and/or graduate work with acceptable grades before they can be moved to classified status. Students with conditionally classified status should complete the conditions of their acceptance as early as possible. Such students may take graduate courses at the same time they are fulfilling the conditions. Prerequisite work is assigned for one or more of the following reasons: 1) low chemistry course GPA in

undergraduate work, 2) insufficient number of undergraduate units in chemistry, or 3) lack of coursework in particular areas of study. In order to change from conditionally classified to classified standing, a student must 1) fulfill the conditions, and 2) obtain the Graduate Advisor's signature on the Change of Classification in Graduate Program form. Only students in classified standing may petition for advancement to candidacy, a requirement for graduation.

Requirements for Advancement to Graduate Candidacy

After approximately two semesters of coursework and completion of a preliminary seminar based on a proposed, faculty-guided research project, students may apply for advancement to graduate candidacy for the MS degree. In addition, the student must have graduate classified standing and must have completed CHEM 100W for the Graduation Writing Assessment Requirement (GWAR). The Preliminary Seminar Guidelines and Evaluation form may be found on the Chemistry Department Forms webpage. The 30-unit Proposed Graduate Degree Program is written by the Graduate Advisor in consultation with the student and entered on the Petition for Advancement to Graduate Candidacy form which must be approved and signed by the Graduate Advisor. Students cannot enroll in CHEM 299 - Master's Thesis or apply for graduation until they are official candidates for a degree. See the Graduate Policies and Procedures section for further details regarding university requirements for advancement to candidacy for the master's degree.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Program Graduation Requirements

In addition to completing the 30 units of coursework listed on the approved Candidacy form, an MS degree candidate in Chemistry must complete the following activities as part of their culminating experience:

Final Seminar

All MS candidates are required to present a departmental seminar based on their research project. The seminar is scheduled through the faculty instructor for CHEM 285 and, therefore, must take place during the fall or spring semester.

Final Oral Examination

All MS candidates are required to pass a Final Oral Examination based on the research project as detailed in the thesis. The Final Oral Examination is administered by the thesis committee, and the candidate must provide the committee with a copy of the thesis for review at least two weeks prior to the exam date. The Final Oral Examination may be scheduled on the same date as the Final Seminar if the two-week thesis delivery requirement is met.

Thesis (Plan A)

The MS thesis document must be approved by the student's thesis research committee before submission. Typically, the thesis committee will provide the candidate feedback during the Final Oral Examination and may request changes

to the thesis before final approval. See the most current version of the SJSU Master's Thesis and Doctoral Dissertation Guidelines and the submission deadlines set by the College of Graduate Studies.

Master's Requirements (30 units)

Graduation Writing Assessment Requirement

Students must pass the Graduation Writing Assessment Requirement (GWAR). *This requirement is satisfied in the core courses.*

Core Courses (19-25 units)

- CHEM 100W - Writing Workshop: Chemical Communications 3 *unit(s)*
If CHEM 100W was completed for an undergraduate degree, three additional units of electives must be substituted.
- CHEM 120S - Chemical Safety Seminar 1 *unit(s)*
- CHEM 285 - Seminar 0.5 *unit(s)* (2 units required - complete course 4 times)
- CHEM 298 - Research 1-6 *unit(s)* (4 units minimum required; 10 units maximum)
- CHEM 200-Level Courses 9 *unit(s)*
- Preliminary Seminar Presentation

Electives (3-9 units)

Any 200-level Chemistry course or any 100-level Chemistry course from the following list with graduate advisor consent.

- CHEM 105 - Computational Data Analysis in Chemistry 3 *unit(s)*
- CHEM 114 - Advanced Organic Chemistry Lab 3 *unit(s)*
- CHEM 121S - Radiation Safety 1-2 *unit(s)*
- CHEM 126 - Introduction to Nuclear Science 3 *unit(s)*
- CHEM 127 - Nuclear Science Lab 3 *unit(s)*
- CHEM 130A - Biochemistry 4 *unit(s)*
- CHEM 130B - Biochemistry 4 *unit(s)*
- CHEM 130C - Biochemistry 3 *unit(s)*
- CHEM 131A - Biochemistry Lab 2 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*
- CHEM 145 - Inorganic Chemistry 3 *unit(s)*
- CHEM 146 - Physical-Inorganic Techniques 3 *unit(s)*
- CHEM 155 - Instrumental Analysis 4 *unit(s)*
- CHEM 170A - Macromolecular, Supramolecular & Nanoscale Systems 1 *unit(s)*

Culminating Experience (Plan A Only) (2 units)

- CHEM 299 - Master's Thesis 1-6 *unit(s)*
- Department Seminar Presentation
- Oral Examination

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Computer Science, MS

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (33 units)
- Program Learning Outcomes

The Master of Science in Computer Science degree, offered by the Department of Computer Science, provides greater depth in computer science for more advanced positions in industry or teaching at the community college level. Check the Department website for details about the Computer Science program.

Admissions Requirements

University Admissions

Applicants must submit a complete graduate application by applying through Cal State Apply and meet all the university admission requirements. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirement webpage at GAPE. For TOEFL Requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Information in this Catalog.

Requirements for Admission to Classified Standing

To enter this program with classified standing, a student must meet the minimum requirements for admission to the Graduate Division. In addition, entering students are expected to have a bachelor's degree in computer science or its equivalent, e.g., a degree presenting at least the breadth and depth of the SJSU BS, Computer Science program. An applicant holding a recent bachelor's degree in Computer Science from an ABET-accredited university will normally meet the course requirements for admission to the MSCS program.

Requirements for Admission to Conditionally Classified Standing

Applicants who meet the minimum requirements for admission to the Graduate Division but lack other prerequisite course knowledge can be admitted in conditionally classified status if there is sufficient space in the program to accommodate them. Conditionally classified students will be required to complete undergraduate coursework to attain Classified standing. The individual admission notification will explain the required terms and conditions for attaining Classified standing.

Transfer of Courses into the Major

Students may transfer nine credits into the program from coursework completed in the SJSU Computer Science Department. A maximum of 6 units may be from courses outside the SJSU Computer Science Department. All transfer credit must fulfill MS, Computer Science program requirements and be approved by the Graduate Coordinator.

Requirements for Advancement to Graduate Candidacy

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. The Computer Science Department policy is that students should complete the GWAR requirement (usually by taking CS 200W) in their first year in the MS program and must complete it two semesters before graduation. Courses that satisfy the GWAR are listed in the course requirements for the program.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by taking CS 200W.

Culminating Experience

Students choose a Plan A (Thesis) or Plan B (Written Project) option as their program culminating experience.

Plan A (Thesis)

After being advanced to candidacy, the student choosing the thesis option must obtain a thesis director from among the tenured or tenure-track faculty of the Computer Science Department who then becomes his or her advisor. Before work can begin, the thesis topic must be approved by a three-member committee consisting of the thesis director, another professor from the CS Department, and a third member who is an expert in the field, selected by the thesis director and approved by the Department Chairperson. The candidate should register for CS 297 before the final semester, and take CS 299 in the final semester of the program. Students who do not finish the thesis in that semester enroll in the 1290R for subsequent semesters until it is completed. Upon completion of the thesis, the candidate must pass a comprehensive oral examination in the area of his or her thesis, conducted by the thesis committee. The thesis must also meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines.

Plan B (Written Project)

After being advanced to candidacy, the student must obtain a project director from the Computer Science Department who then becomes his or her advisor. Before work can begin, the project topic must be approved by a three-member committee consisting of the project director, another professor from the CS Department, and a third member who is an expert in the field, selected by the thesis director and approved by the Department Chairperson. The candidate should register for the CS 297 before the final semester, and take the CS 298 in the final semester of the program.

Students who do not finish the project in that semester enroll in the 1290R for subsequent semesters until it is completed. Upon completion of the project, the candidate must pass an oral examination in the area of his or her project conducted by the project committee.

Master's Requirements (33 units)

Core Courses (21 units)

- CS 200W - Graduate Technical Writing 3 *unit(s)* (GWAR)

Foundations (3 units)

Choose one of the following foundations courses:

- CS 252 - Advanced Programming Language Principles 3 *unit(s)*
- CS 254 - Theory of Computation 3 *unit(s)*
- CS 255 - Design and Analysis of Algorithms 3 *unit(s)*
- CS 262 - Randomized Algorithms and Applications 3 *unit(s)*
- MATH 279A - Graph Theory 3 *unit(s)*

Architecture (3 units)

Choose one of the following architecture courses:

- CS 247 - Advanced Computer Architecture 3 *unit(s)*
- CS 258 - Computer Communication Systems 3 *unit(s)*
- CS 259 - Advanced Parallel Processing 3 *unit(s)*
- CS 268 - Topics in Wireless Mobile Networking 3 *unit(s)*

Systems Software (3 units)

Choose one of the following systems software courses:

- CS 218 - Topics in Cloud Computing 3 *unit(s)*
- CS 249 - Distributed Computing 3 *unit(s)*
- CS 253 - Advanced Compiler Design 3 *unit(s)*
- CS 257 - Database System Principles 3 *unit(s)*
- CS 267 - Topics in Database Systems 3 *unit(s)*

Specialty Courses (9 units)

Select nine units of 200-level computer science courses from the Foundations, Architecture, or Systems Software classes above, or from the following list:

Variable topic courses may be repeated for up to 6 units.

- CS 216 - Physically Based Modeling for Computer Graphics 3 *unit(s)*
- CS 223 - Advanced Bioinformatics 3 *unit(s)*
- CS 224 - Next Generation Sequencing & Genome Assembly 3 *unit(s)*
- CS 225 - Topics in Sequence-based Machine Learning for Bioinformatics 3 *unit(s)*
- CS 256 - Topics in Artificial Intelligence 3 *unit(s)*
- CS 265 - Cryptography and Computer Security 3 *unit(s)*

- CS 266 - Topics in Information Security 3 *unit(s)*
- CS 271 - Topics in Machine Learning 3 *unit(s)*
- CS 272 - Reinforcement Learning and Sequential Decision Making 3 *unit(s)*
- CS 273 - Topics in Natural Language Processing 3 *unit(s)*
- CS 274 - Topics in Web Intelligence 3 *unit(s)*
- CS 276 - Machine Learning on Graphs 3 *unit(s)*
- CS 286 - Advanced Topics in Computer Science 3 *unit(s)*

Subject Varies by Topic

- CS 286 - Advanced Topics in Computer Science 3 *unit(s)* (*Note: Unless the course syllabus states otherwise, a CS 286 course offering is deemed to be in the Speciality Courses area*)

Electives (6 units)

Select 6 units of permissible elective courses from the following list. Courses not on the list must be approved in advance by a graduate coordinator. Any graduate courses listed above not used to satisfy degree requirement may be used as an elective course.

- CS 116A - Introduction to Computer Graphics 3 *unit(s)*
- CS 116B - Computer Graphics Algorithms 3 *unit(s)*
- CS 123A - Bioinformatics I 3 *unit(s)*
- CS 123B - Bioinformatics II 3 *unit(s)*
- CS 134 - Computer Game Design and Programming 3 *unit(s)*
- CS 136 - Introduction to Computer Vision 3 *unit(s)*
- CS 143C - Numerical Analysis and Scientific Computing 3 *unit(s)*
- CS 143M - Numerical Analysis and Scientific Computing 3 *unit(s)*
- CS 153 - Concepts of Compiler Design 3 *unit(s)*
- CS 155 - Introduction to the Design and Analysis of Algorithms 3 *unit(s)*
- CS 156 - Introduction to Artificial Intelligence 3 *unit(s)*
- CS 157B - Database Management Systems II 3 *unit(s)*
- CS 157C - NoSQL Database Systems 3 *unit(s)*
- CS 158A - Computer Networks 3 *unit(s)*
- CS 158B - Computer Network Management 3 *unit(s)*
- CS 159 - Introduction to Parallel Processing 3 *unit(s)*
- CS 161 - Software Project 3 *unit(s)*
- CS 168 - Blockchain and Cryptocurrencies 3 *unit(s)*
- CS 171 - Introduction to Machine Learning 3 *unit(s)*
- CS 174 - Server-side Web Programming 3 *unit(s)*
- CS 175 - Mobile Device Development 3 *unit(s)*
- CS 176 - Introduction to Social Network Analysis 3 *unit(s)*
- MATH 142 - Introduction to Combinatorics 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- MATH 162 - Statistics for Bioinformatics 3 *unit(s)*
- MATH 163 - Probability Theory 3 *unit(s)*
- MATH 164 - Mathematical Statistics 3 *unit(s)*
- MATH 177 - Linear and Non-Linear Optimization 3 *unit(s)*
- MATH 178 - Mathematical Modeling 3 *unit(s)*
- MATH 179 - Introduction to Graph Theory 3 *unit(s)*

- MATH 203 - Applied Mathematics, Computation, and Statistics Projects 3 *unit(s)*

Electives may include three units from:

- CS 180 - Individual Studies 1-3 *unit(s)*
- CS 280 - Graduate Individual Studies 1-3 *unit(s)*

Culminating Experience (6 units)

Complete One Option (Plan A or Plan B)

Plan A (Thesis) (6 units)

- CS 297 - Preparation for Writing Project or Thesis 3 *unit(s)*
- CS 299 - Master's Thesis 3 *unit(s)*
- Comprehensive Oral Examination

Plan B (Project) (6 units)

- CS 297 - Preparation for Writing Project or Thesis 3 *unit(s)*
- CS 298 - Master's Writing Project 3 *unit(s)*
- Comprehensive Oral Examination

Total Units Required (33 units)

No more than 6 units may be taken from outside the Department of Computer Science.

Elective courses must be planned in consultation with a CS Graduate Advisor or your CS Thesis or CS Writing Project advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Data Science, MS

- Admissions Requirements
- Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (36 units)
- Program Learning Outcomes

The Master of Science in Data Science program, jointly offered by the Department of Computer Science and Department of Mathematics and Statistics, provides students with a Bachelor's degree in the sciences or engineering with foundational knowledge, experience, and skills that are crucial for a data science career. It features a multidisciplinary curriculum in applied math, statistics, computer science, and their intersection - machine learning. Its rigorous, balanced coursework provides students with strong mathematical, computing, and data skills, as well as project experience. Graduates of this program will have the necessary theoretical knowledge, practical data analysis and coding skills for solving complex real-world problems based on massive amounts of data and also meet the qualifications for various data scientist positions in industry and government.

Admission Requirements

Candidates must meet all of the university admission requirements. Students can be admitted in either classified or conditionally classified standing.

To be admitted to classified standing, applicants must have earned a Bachelor's degree in the sciences or engineering from a regionally accredited institution with a minimum GPA of 3.0 (based on a 4.0 scale), and have completed all program prerequisites listed below. Two to three letters of recommendation are also required. The GRE General Test score (when available) should be submitted along with the packet and it will be used to compare and rank applicants. To enter this program with classified standing, a student must have passed the following prerequisites courses (with a C- or better OR the listed required grade below):

- Three semesters college-level calculus courses - differential calculus (e.g., MATH 30 at SJSU), integral calculus (e.g., MATH 31 at SJSU), and a multivariable calculus course (e.g., MATH 32 at SJSU), with a grade of B or better on the multivariable calculus course.
- A linear algebra course (e.g., MATH 39 at SJSU), with a grade of B or better.
- A discrete math course (e.g., MATH 42 or CS 42 at SJSU).
- An upper-division calculus-based statistics course (e.g., MATH 161A at SJSU), with a grade of B or better.
- A probability theory course (e.g., MATH 163 at SJSU), with a grade of C or better.
- Two CS introductory courses on programming and data structures (e.g., CS 46A and CS 46B at SJSU).
- An upper division data structures and algorithms course (e.g., CS 146 at SJSU), with a grade of B or better.
- An advanced course in object-oriented programming (e.g., CS 151 or CMPE 135 at SJSU) or two semesters of statistical programming coursework, (e.g., MATH 167R and MATH 167PS at SJSU).

Applicants from countries in which the native language is not English must submit TOEFL scores. Minimum TOEFL scores acceptable for admission are 575 (Paper-based), 240 (Computer-based), or 90 (Internet-based).

Advancement to Candidacy

Students may advance to candidacy after completing all admission conditions and all prerequisites for the culminating experience including the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Master's Requirements (36 units)

Core Courses (27 units)

- CS 156 - Introduction to Artificial Intelligence 3 *unit(s)*
- CS 157A - Introduction to Database Management Systems 3 *unit(s)*
- CS 200W - Graduate Technical Writing 3 *unit(s)* (GWAR)
- CS 274 - Topics in Web Intelligence 3 *unit(s)*
- MATH 164 - Mathematical Statistics 3 *unit(s)*
- MATH 261A - Regression Theory and Methods 3 *unit(s)*

- MATH 250 - Mathematical Data Visualization 3 *unit(s)*
- MATH 252 - Cluster Analysis 3 *unit(s)*

Complete one course from:

- MATH 251 - Statistical and Machine Learning Classification 3 *unit(s)*
- CS 271 - Topics in Machine Learning 3 *unit(s)*

Elective Course (3 units)

The elective can be selected from the list of courses offered in the Department of Computer Science and Department of Mathematics and Statistics and requires approval from the program coordinator.

Overall, students must take at least 4 MATH courses and 4 CS courses, not counting the writing course (CS 200W) and the project/thesis courses (CS 297/MATH 297A, CS 298/MATH 298).

Culminating Experience (6 units)

Both plans require two semesters of enrollment in 6-unit coursework in order to conduct the proposed project or thesis study. The student is responsible for securing the commitment of a full-time tenured or tenure-track faculty member who agrees to serve as his or her advisor. The student must also secure the commitments of two additional members, one of whom must be a full-time tenured or tenure-track faculty member, to serve as the student's committee. Topics and committee selections must be approved by the MS Data Science Coordinator. Either plan requires writing a manuscript in a formal format describing original data science research, which is submitted for review by the student's committee. In addition, the student must successfully pass a comprehensive oral examination by the student's committee based on the conducted project or thesis study.

Plan A (Thesis)

- MATH 297A - Preparation for Writing Project, Research Project or Thesis 3 *unit(s)* or
 - CS 297 - Preparation for Writing Project or Thesis 3 *unit(s)*
- and*
- CS 299 - Master's Thesis 3 *unit(s)* or
 - MATH 299 - Master's Thesis 1-4 *unit(s)*

Plan B (Project)

- MATH 297A - Preparation for Writing Project, Research Project or Thesis 3 *unit(s)* or
 - CS 297 - Preparation for Writing Project or Thesis 3 *unit(s)*
- and*
- CS 298 - Master's Writing Project 3 *unit(s)* or
 - MATH 298 - Special Study 1-4 *unit(s)*

Total Units Required (36 units)

Students who enter the program having already completed courses equivalent in level and content to any of those required for the degree may be allowed to substitute an appropriate alternative course upon advanced approval by the MS Data Science Coordinator. The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 9.

Geology, MS

- Admission Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The MS program provides graduates with advanced training in the Geosciences, culminating in the completion of an independent research thesis project. The academic curriculum and extensive faculty expertise provide the opportunity for study in many areas of the Geosciences. Graduates are employed as environmental consultants, engineering geologists, hydrogeologists, hydrologists, and geotechnical engineers.

The Department of Geology welcomes students with undergraduate degrees in other disciplines.

For more information visit the SJSU Geology website.

Admission Requirements

Candidates must meet all university admission requirements. Students can be admitted in either classified or conditionally classified standing. If an applicant's preparation for advanced graduate work is considered insufficient to meet the course prerequisites or other departmental requirements (typically because the student does not have a BS in Geology or related field), the conditions will include taking the core Geology BS courses to meet their requirements.

The GRE is not required.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Advancement to Graduate Candidacy

University Candidacy Requirements

A student is eligible for advancement to candidacy for the MS degree in Geology after the student has fulfilled the general all-university requirements for advancement to candidacy as outlined in the Graduate Policies and Procedures section of this catalog and the department requirements. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR). In addition, the student's approval of the candidacy must be done by the departmental graduate advisor.

Department Candidacy Requirements

The student will prepare a written thesis proposal in consultation with her/his thesis adviser. The student will defend her/his proposal in an oral examination with her/his thesis advisor and a minimum of two other thesis committee members

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Geology Department Requirements

An approved program for each candidate may be designed in consultation with the advisor on the basis of each individual's objectives. The program shall include at least 30 semester units earned beyond the bachelor's degree in 200-level and 100-level courses approved for graduate credit. This total includes 4 semester units of thesis research. At least 12 units must consist of 200-level courses. All students are required to take a 2-unit seminar (GEOL 285). All candidates are required to submit a master's thesis.

An oral presentation of thesis research is to be made before an open meeting of the Geology Department. The thesis must be approved by the student's thesis committee and submitted in final form, as defined in the SJSU Master's Thesis and Doctoral Dissertation Guidelines, to the Graduate Division of the university in accordance with published deadlines.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core (14 units)

- GEOL 285 - Seminar 2 *unit(s)*

Complete Twelve Units From:

- GEOL 213 - Advanced Igneous and Metamorphic Petrology 4 *unit(s)* (GWAR)
- GEOL 214 - Volcanology 4 *unit(s)*
- GEOL 222 - Advanced Sedimentary Geology 4 *unit(s)*
- GEOL 231 - Advanced Structural Geology and Tectonics 4 *unit(s)* (GWAR)
- GEOL 234 - Advanced Geomorphology 4 *unit(s)* (GWAR)
- GEOL 238 - Advanced Hydrogeology 4 *unit(s)* (GWAR)
- GEOL 242 - Advanced Paleontology 4 *unit(s)*
- GEOL 255 - Advanced Geology 4 *unit(s)*

Electives (12 units)

Other 100-level or 200-level courses, selected with advisor approval. GEOL 285 may be taken a second time.

Culminating Experience (4 units)

Plan A (Thesis)

- GEOL 299 - Master's Thesis 1-4 *unit(s)* (1 *unit* of GEOL 299 in each of four semesters is recommended)
- Thesis Defense (oral presentation)

Total Units Required (30 units)

Elective courses must be planned in consultation with the Geology Department Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Marine Science, MS

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

Moss Landing Marine Laboratories (MLML) is the second oldest marine lab in Monterey Bay. Established in 1966, it has an international reputation for excellence in marine science research and education. The hands-on, field oriented MLML approach places students, faculty, research, and staff where discoveries are made: at the frontiers of marine science worldwide. The wealth of nearby marine resources, excellent marine facilities and operations, renowned faculty and research-based curriculum combine to make the MLML program one of the best graduate programs of its kind in the United States. MLML provides students with a cutting-edge education that prepares them for careers in marine science and oceanography, education and outreach, conservation, policy and management, and for doctoral studies. See the program website at mlml.sjsu.edu/gradprog/.

For more information about the program contact the MLML graduate program coordinator at mlml-grad-program@sjsu.edu.

Admissions Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department (MLML) to obtain admission into the MS Marine Science program. See the MLML graduate program website for program application and admission requirements.

Before submitting application materials, prospective students must select and contact an MLML faculty advisor(s) and consider scheduling a visit to MLML. Discussing your application with a potential faculty advisor will (1) provide you with a better understanding of what our program has to offer; (2) help you determine if the selected faculty advisor is the right academic mentor for you; (3) enable you to speak with the potential advisor about the application process; (4) allow you to speak with current students; and (5) strengthen your application and improve your chances of acceptance.

For Fall admission, the MLML online program application deadline is February 1, after which applicants must also email the supplemental application materials listed below to the MLML Graduate Program Coordinator (mlml-grad-program@sjsu.edu) as a single PDF attachment by February 15.

For Spring admission, the MLML online program application deadline is September 30, and applicants must also email the following supplemental application materials to the MLML Graduate Program Coordinator (mlml-grad-program@sjsu.edu) as a single PDF attachment by September 30 as well:

- Statement of Purpose - detailing (at a minimum) (1) why you want to study marine science, (2) why you want to attend MLML, (3) your background in marine science, (4) your specific research interests, and (5) what long-term goals you ultimately intend to pursue by attending MLML;
- CV/Resume - summarizing relevant academic and professional experience, including (1) academic background (degrees earned, GPA, relevant coursework), (2) research experience, and (3) relevant employment history, volunteer experience, and/or memberships;
- Unofficial Transcripts - from all post-secondary institutions attended;
- The GRE is not required.

Applicants must also request to have three letters of recommendation sent to the program from people familiar with their academic and/or professional background. Letters of recommendation must be emailed directly from your recommenders as a .pdf attachment to the MLML Graduate Program Coordinator at mlml-grad-program@sjsu.edu by February 15 for Fall admission and by September 30 for Spring admission.

These application instructions can also be found at [Applying to the MLML Master's Program](#).

Applicants may be admitted either as conditional or classified. Conditionally admitted applicants will have some condition(s), such as completion of additional coursework, placed upon their admission into the MLML program; classified students are admitted into the program without any such condition(s).

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the [Graduate Program Test Requirement](#) webpage.

Requirements for Advancement to Candidacy

SJSU university requirements for advancement to candidacy for the master's degree are outlined in the [Graduate Policies and Procedures](#) section.

Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

The MLML program requirements for Advancing to Candidacy are as follows:

- Completion of the majority of coursework with the exception of the Culminating Experience course MS 299 - Master's Thesis
- Acquired thesis proposal approval from the entire thesis committee
- Acquired research permitting approval (if applicable)

CSU policy requires that English competency shall be a requirement of classified graduate students as a condition necessary for advancement to candidacy for the award of a master's degree. MLML students satisfy this requirement by earning a grade of B or better in one of the five core marine science courses.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the [Graduation Requirements](#) section of the [Graduate Policies and Procedures](#).

Marine Science MS Graduation Requirements

Graduate students shall successfully complete 30 units of course work with a grade of "B" or better in each course, a thesis project, and an oral research defense to qualify for the M.S. degree in Marine Science at Moss Landing Marine Laboratories.

All students shall maintain continuous enrollment in the MLML graduate program until all degree requirements are met. All students shall complete core courses with a grade of "B" or better. If a student receives lower than a "B" in a core course, the student may either retake this course or take another core course to fulfill the core course degree requirement. If a student receives lower than a "B" in a non-core class, the student may either retake the course or take another course to use towards the 30-unit requirement. Students may enroll in MS 298, while they are conducting their research. Students are eligible to use 2-units of MS 298 toward their Elective Coursework requirement. Students are encouraged to complete their degree requirements within three years.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Plan A (Thesis)

The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee, and must meet the academic standards of the MLML program. The candidate for the MS in Marine Science at MLML must also successfully pass a final oral defense of the thesis, in the form of a seminar open to the public, with the thesis committee evaluating the success of the presentation.

Master's Requirements (30 units)

Core (18 units)

Complete three marine science core courses from:

- MS 203 - Advanced Marine Ecology 4 *unit(s)* (GWAR)
- MS 241 - Advanced Geological Oceanography 4 *unit(s)* (GWAR)
- MS 242 - Advanced Physical Oceanography 4 *unit(s)* (GWAR)
- MS 243 - Advanced Chemical Oceanography 4 *unit(s)* (GWAR)
- MS 244 - Advanced Biological Oceanography 4 *unit(s)*

Complete one data analysis course from:

- MS 204 - Sampling and Experimental Design 4 *unit(s)*
- MS 263 - Data Analysis in Marine Science 4 *unit(s)*

Complete at least 2 units of the variable topic seminar:

- MS 285 - Graduate Seminar in Marine Science 2 *unit(s)*

Elective Courses (8 units)

- Complete additional 200- or 100-level Elective Courses selected in consultation with the graduate advisor to meet the 30 units degree requirements
- MS 285 - Graduate Seminar in Marine Science 2 *unit(s)* (Variable topic seminar may be taken up to two times total)
- MS 298 - Research in the Marine Science 1-4 *unit(s)* (May be taken for up to 2 units)

Culminating Experience (4 units)

Plan A (Thesis)

- MS 299 - Master's Thesis 1-4 unit(s) (4 units required)
- Thesis Defense 0 unit(s)

Total Units Required (30 units)

Advanced Coursework must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Mathematics, MA

- Requirements for Admission
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (33 units)
- Program Learning Outcomes

This degree, offered by SJSU's Department of Mathematics and Statistics is recommended for future community college teachers and for students who plan to continue toward the PhD in mathematics.

Requirements for Admission

Candidates must meet all the university Graduate Admissions. Students can be admitted in either classified or conditionally classified standing. If an applicant's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental requirements, the conditions will include taking preparatory courses to meet these requirements. Such courses will not count as part of the master's degree program requirements.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Classified Standing

To enter this program with classified standing, a student must meet the minimum requirements for admission to the Graduate Division, have completed 18 semester units of upper-division undergraduate mathematics with a GPA of at least 3.0, and have one to three letters of recommendation submitted on his or her behalf. The coursework must be acceptable toward a bachelor's degree in mathematics and may not be counted toward the MA degree.

Conditionally Classified Standing

A student who meets the minimum requirements for admission to the Graduate Division but does not satisfy the mathematics coursework requirements stated above may be admitted as a conditionally classified student. Eligibility is determined on a case-by-case basis. The individual admission letter will explain the required terms and conditions for attaining classified standing. After arrival at SJSU, a conditionally admitted student must complete additional

coursework to make up for the unit deficiency in order to achieve classified status. These make-up units will not be included in the MA degree unit requirement total.

Requirements for Advancement to Graduate Candidacy

To advance to candidacy in the MA Mathematics, a student must meet the university candidacy requirements, as stated in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

The student must complete the Petition for Advancement to Graduate Candidacy form. This form lists, among other things, all the coursework to be counted toward the master's degree. After the form has been signed by the student's thesis or writing project advisor (if applicable) and the Graduate Coordinator, it is forwarded to GAPE for final approval. Any subsequent changes to the student's program require approval from GAPE.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

Students must pass the Graduation Writing Assessment Requirement (GWAR).

Program Graduation Requirements

Culminating Experience

Students must choose one of three options: The Plan A (Thesis), Plan B (Project), or Plan B (Comprehensive Examination).

Plan A (Thesis)

A student who selects the Thesis option must find a willing tenured or tenure-track faculty member to serve as the thesis advisor, and complete a thesis under that advisor's supervision. The thesis must be reviewed and approved by a committee composed of the advisor and two other faculty members chosen by the student in consultation with the advisor. The student must give a public presentation on the thesis, which is followed by an oral examination (defense) conducted by the committee. The thesis must be filed with the College of Graduate Studies, subject to the SJSU Master's Thesis and Doctoral Dissertation Guidelines and deadlines established by that office.

Thesis students must enroll in MATH 299 (3 units). Students receive credit when the thesis is completed, successfully defended, and all committee members have signed off on it. Students who do not complete their theses during the semester in which they are enrolled in MATH 299 will receive a grade of "RP" for that course. If all other degree requirements have been completed, students must subsequently enroll in MATH 1290R in compliance with university regulations until the thesis is completed, defended, and approved by Graduate Studies.

Plan B (Project)

A student who selects the Project option must find a willing tenured or tenure-track faculty member to serve as the project advisor, and complete a written project under that advisor's supervision. The project must be reviewed and approved by a committee composed of the advisor and two other faculty members chosen by the student in consultation with the advisor. The student must give a public presentation on the project, which is followed by an oral examination (defense) conducted by the committee.

Students choosing the Plan B (Project) option must enroll in MATH 298 (3 units). Students receive credit when the writing project is completed, successfully defended, and all committee members have signed off on it. Students who do not complete their projects during the semester in which they are enrolled in MATH 298 will receive a grade of "RP" for that course. If all other degree requirements have been completed, students must subsequently sign up for MATH 1290R in compliance with university regulations until the writing project is completed and defended.

Plan B (Comprehensive Examination)

Students who select this option must pass two written comprehensive examinations. One examination will be in Higher Algebra (MATH 221A and MATH 221B). The second exam will be in Analysis (MATH 231A and MATH 231B).

Students choosing the Plan B (Comprehensive Exam) option must enroll in an additional elective (3 units) selected in consultation with the program graduate advisor. Students complete the program Culminating Experience when they pass both exams. Students who successfully complete all other program requirements but not one or both exams must subsequently enroll in MATH 1290R for the following semester or semesters in compliance with the university requirement for continuous enrollment until both exams have been passed in one sitting.

Master's Requirements (33 units)

Core Courses (21 units)

- CS 200W - Graduate Technical Writing 3 unit(s) (GWAR)
- MATH 221A - Higher Algebra I 3 unit(s)
- MATH 221B - Higher Algebra II 3 unit(s)
- MATH 231A - Real Analysis 3 unit(s)
- MATH 231B - Functional Analysis 3 unit(s)

Complete Two Courses From:

- MATH 229 - Advanced Matrix Theory 3 unit(s)
- MATH 238 - Advanced Complex Variables 3 unit(s)
- MATH 275A - Topology 3 unit(s)
- MATH 279A - Graph Theory 3 unit(s)

Electives (6 units)

Complete two courses from:

- MATH 203 - Applied Mathematics, Computation, and Statistics Projects 3 unit(s)
- MATH 226 - Theory of Numbers 3 unit(s)
- MATH 229 - Advanced Matrix Theory 3 unit(s)
- MATH 233A - Applied Mathematics I 3 unit(s)
- MATH 234 - Advanced Dynamical Systems 3 unit(s)
- MATH 238 - Advanced Complex Variables 3 unit(s)
- MATH 243A - Numerical Solution of PDEs 3 unit(s)
- MATH 243M - Numerical Linear Algebra 3 unit(s)

- MATH 261A - Regression Theory and Methods 3 *unit(s)*
- MATH 263 - Stochastic Processes 3 *unit(s)*
- MATH 275A - Topology 3 *unit(s)*
- MATH 275B - Advanced Topics in Topology 3 *unit(s)*
- MATH 279A - Graph Theory 3 *unit(s)*
- MATH 279B - Advanced Graph Theory 3 *unit(s)*
- MATH 285M - Advanced Topics in Pure Mathematics 3 *unit(s)*
- MATH 297A - Preparation for Writing Project, Research Project or Thesis 3 *unit(s)*

Additional Electives (3 units)

Complete an additional 100-level or 200-level courses selected in consultation with MA Mathematics advisor. Elective courses may include a maximum of 3 units of MATH 280 and/or MATH 297A.

Courses excluded: MATH 102, MATH 105, MATH 106, MATH 201A, MATH 287.

Culminating Experience (3 units)

Plan A (Thesis)

- MATH 299 - Master's Thesis 1-4 *unit(s)* (3 *units required*)
- Oral Presentation
- Oral Defense

Plan B (Writing Project)

- MATH 298 - Special Study 1-4 *unit(s)* (3 *units required*)
- Oral Presentation
- Oral Defense

Plan B (Comprehensive Exam)

- Additional 3-unit elective selected in consultation with graduate advisor
- Comprehensive Exam

Total Units Required (33 units)

Elective courses must be planned in consultation with the MA Mathematics Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 6.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Mathematics, Mathematics Education Concentration, MA (Not Accepting Students)

This degree is recommended for secondary school mathematics teachers who want to increase their mathematical competence and their knowledge of the teaching and learning of mathematics.

Requirements for Admission to Classified Standing

Admission requirements to classified standing for this program are the same as for the MA - Mathematics program, except the 18 semester unit requirement is replaced by 21 semester units.

Requirements for Admission to Conditionally Classified Standing

Admission requirements to conditionally classified standing are the same as for the MA - Mathematics program.

Requirements for Advancement to Candidacy for the MA - Mathematics, Concentration in Mathematics Education

Requirements are the same as for the MA - Mathematics except that requirement 2 is replaced by: The Qualifying Examination is an individualized written exam on fundamental ideas related to the concentration in Mathematics Education. These ideas are normally covered in MTED 209.

Completing Requirements for the MA - Mathematics, Concentration in Mathematics Education

Both Plan A (with Thesis) and Plan B (with Writing Project) requirements are the same as in the MA Mathematics except the thesis or writing project must be in the field of mathematics education.

Electives

The rules for elective units are the same as those for MA - Mathematics

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Required Core Courses (21 units)

- See Department of Mathematics and Statistics for course options 3 *unit(s)*

Complete Twelve Units From:

Including a one-year sequence

- MATH 221A - Higher Algebra I 3 *unit(s)*
- MATH 221B - Higher Algebra II 3 *unit(s)*

- MATH 226 - Theory of Numbers 3 *unit(s)*
- MATH 229 - Advanced Matrix Theory 3 *unit(s)*
- MATH 231A - Real Analysis 3 *unit(s)*
- MATH 231B - Functional Analysis 3 *unit(s)*
- MATH 233A - Applied Mathematics I 3 *unit(s)*
- MATH 234 - Advanced Dynamical Systems 3 *unit(s)*
- MATH 238 - Advanced Complex Variables 3 *unit(s)*
- MATH 243A - Numerical Solution of PDEs 3 *unit(s)*
- MATH 243M - Numerical Linear Algebra 3 *unit(s)*
- MATH 258 - Categorical Data Analysis 3 *unit(s)*
- MATH 261A - Regression Theory and Methods 3 *unit(s)*
- MATH 261B - Design and Analysis of Experiments 3 *unit(s)*
- MATH 263 - Stochastic Processes 3 *unit(s)*
- MATH 265 - Time Series Theory and Methods 3 *unit(s)*
- MATH 275A - Topology 3 *unit(s)*
- MATH 275B - Advanced Topics in Topology 3 *unit(s)*
- MATH 279A - Graph Theory 3 *unit(s)*
- MATH 279B - Advanced Graph Theory 3 *unit(s)*
- MATH 285 - Advanced Topics in Mathematics 3 *unit(s)*

Electives (6 units)

- 100-200 level mathematics courses not to include MATH 102, MATH 105, MATH 106, MATH 33LA, MATH 39, MATH 33A, or MATH 287.

Culminating Experience (3 units)

Plan A

- MATH 299 - Master's Thesis 1-4 *unit(s)* (3 units required)

Plan B

- MATH 298 - Special Study 1-4 *unit(s)* (3 units required)

Total Units Required (30 units)

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 6.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Medical Product Development Management, MS

- Requirements for Admission to Classified Standing
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (35 units)

- Program Learning Outcomes

Overview

The Masters of Science degree in Medical Product Development Management (MPDM) is offered by SJSU's College of Science, in collaboration with the College of Information, Data & Society and the Lucas Graduate School of Business. The MPDM MS program combines clinical research, regulatory affairs, bioinformatics and customized technical classes with MBA-level business and management courses. The industry-relevant curriculum was designed in collaboration with experts from biomedical companies in the greater San Francisco Bay area to prepare students for careers in the biopharmaceutical, medical devices and in-vitro diagnostics industries. To accommodate students who work full-time, courses are offered during evenings or weekends, and several classes are offered online for scheduling flexibility.

Students in the Master of Science in Medical Product Development Management degree program develop proficiency in applying leadership, management and decision making skills in a regulated environment; understanding and conversing with others in a multi-disciplinary field; and understanding ethical, business, financial, global, and strategic implications in medical product development. The MPDM program prepares students to enrich their communities as ethical and socially responsible graduates in a field in which the highest levels of integrity are a fundamental necessity.

Please refer to the MPDM program website for more information.

Requirements for Admission to Classified Standing

Applying for graduate school at San José State University is a two-step process. Apply to the university through Cal State Apply to obtain approval for university-level admission, and to the department to obtain admission into the MS, Medical Product Development Management program. Please visit the admission requirements page for more information. Applicants may come from a wide variety of undergraduate (or postgraduate) areas of study including but not limited to nursing, pre-med, biology, chemistry, mathematics, science education, pharmacy, engineering, business, computer science, psychology, social sciences, and pre-law.

To be accepted into the program in classified standing, an applicant must:

- Meet all university admission requirements.
- Hold a baccalaureate degree from an accredited four-year college or university.
- Have a grade point average (GPA) of at least 2.5 (3.0 or above preferred) in the last 60 semester or 90 quarter units of coursework.
- Satisfactory completion of a 3-unit undergraduate course in introductory statistics and probability from an accredited college or university is recommended.
- Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirement webpage.

Applicants should note that a high degree of proficiency in both written and oral communications in English is a fundamental skill required both to complete the degree program and for success in the field.

The program does not accept students in conditionally classified standing.

Requirements for Advancement to Candidacy

Students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the master's degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR). The program GWAR course

is SMPD 281A. Requirements for advancing to candidacy in the MS, Medical Product Development Management are successful completion of SMPD 281A and 9 units of overall program credits.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Program Graduation Requirements

The general requirements for the course completion as outlined below.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

SMPD 281A will satisfy the graduation writing requirement for MPDM.

Culminating Experience

Plan B (Project)

The culminating project challenges the student to demonstrate leadership, teamwork, and decision-making skills. The student will write or prepare a publication-worthy paper or presentation for a biomedical professional journal, conference, or event. The paper or presentation must demonstrate the depth of knowledge of the processes, methods, and procedures used in clinical research and development or in the management of medical product development on a topic selected by the student (with advisor approval).

This degree is listed with the College of Science.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional & Global Engagement. Registration and enrollment in a Special Session course or program must use the special session application form and will follow the special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the Professional Education website for more information.

Master's Requirements (35 units)

- SMPD 283A - Regulatory Affairs I, Biopharmaceutical 3 unit(s)
- SMPD 283B - Regulatory Affairs II Device-Diagnostics 3 unit(s)
- SMPD 286 - Statistical Methods in Clinical Trials 3 unit(s)
- SMPD 287 - Informatics in Drug and Device Development 3 unit(s)

Management Courses (12 units)

- BUS 210 - Developing and Managing People 3 *unit(s)* (GWAR)
- BUS 284C - Managing Medical Product Development 3 *unit(s)*
- BUS 286 - Project Management 3 *unit(s)*

Choose one course (3 units):

- SMPD 202T - MPDM Seminars: Biomedical Business 3 *unit(s)*
- BUS 250 - Law and Ethics 3 *unit(s)*

Core Courses (11 units)

Clinical Development (6 units)

- SMPD 281A - Clinical Development Seminar I 3 *unit(s)* (GWAR)
- SMPD 285 - MPDM Research / Practicum 1 *unit(s)*
- SMPD 281B - Clinical Development Seminar II 2 *unit(s)*

Clinical Trials (2 units)

- SMPD 289A - Special Topics in Clinical Trials Management I 2 *unit(s)*

Culminating Experience (3 units)

Plan B Project

- SMPD 289B - Clinical Trials Seminar II 3 *unit(s)*

Total Units Required (35 units)

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Meteorology, MS

- Admission Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Meteorology prepares students for high-level professional responsibility, independent research, and continued graduate work in atmospheric science. Graduate-level theoretical and applied meteorology courses and a substantial research project lead to the preparation of the master's thesis, the culmination of the degree plan of study. Departmental opportunities for financial support include research and teaching assistantships.

The Department of Meteorology and Climate Science has one of the most active research programs at SJSU. The meteorology faculty has a wide range of expertise and supports a broad range of research activity. Their areas of specialization include Weather Analysis and Forecasting, Fire Weather, Urban Meteorology and Air Pollution, Atmospheres of Other Planets, Tropical Meteorology, Radar and Satellite Remote Sensing, Cloud and Aerosol Physics, Atmospheric Dynamics, Meteorological Data Processing, Data Communications, and Data Acquisition and Display.

Our graduates find employment in forecasting, research, consulting and media, and continue for the Ph.D. degree at top universities throughout the country. Department alumni include top scientists and forecasters in The National Oceanic and Atmospheric Administration (NOAA), the National Weather Service (NWS), the United States Air Force and Navy, NASA, various state and federal air pollution agencies, the aerospace industry, and aviation operations. Others of our alumni are university professors, high school and community college teachers, TV forecasters, meteorologists in the wind power, electric, gas and oil industries, science writers, and consultants for legal cases, air pollution problems and building design.

Admission Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MS, Meteorology program. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Information.

Requirements for Admission to Classified Standing

Students are admitted to the MS, Meteorology program in Classified or Conditional Standing. Admission to classified standing requires the following. Applicants must:

- Possess the equivalent of an SJSU BS in Meteorology or, with the approval of the department graduate committee, a degree in physical science or mathematics. Students entering with degrees in other areas may be admitted to conditionally classified standing, and will be required to make up deficiencies (e.g., in meteorology and math) before enrolling in the core graduate classes.
- Have earned a minimum GPA of 2.75 (on a scale of 0-4) in their BS degrees.
- Submit Graduate Record Examination (GRE) scores. More information about the GRE can be found on the Graduate Program Test Requirements webpage.

Requirements for Admission to Conditionally Classified Standing

Those applicants who meet minimum requirements for graduate admission, but do not meet departmental requirements, may be admitted to conditionally classified standing on the approval of the department graduate committee. The individual admission notification will explain the required terms and conditions for attaining Classified standing. Resolving deficiencies usually involve the successful completion of undergraduate courses in meteorology courses and math. Upon completion of these courses, the student advances from conditional to classified standing via petition to Graduate Studies.

Requirements for Advancement to Candidacy

University requirements for advancement to candidacy for the master's degree are outlined in the Graduate Policies and Procedures section. Competence in the general areas covered by METR 121A, METR 125, either METR 60 or METR 171A (Synoptic Meteorology, to be decided in consultation with the department graduate committee), and METR 100W or METR 202, must be demonstrated to the Department Graduate Committee **prior** to advancement to candidacy. This can be done by satisfactory completion of these courses (or their equivalent) with a minimum grade of "B" in each, or successful completion of a comprehensive written examination. Students should consult with the graduate advisor concerning these alternatives. A student admitted in classified standing may be advanced to candidacy after completion of the terms and conditions specified in the admission notification letter.

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. MS, Meteorology students are currently required to take METR 202 to satisfy this University requirement.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures. Courses taken to meet the requirements for advancement to candidacy will not be counted as part of the MS program. All students must complete the Graduation Writing Assessment Requirement.

Graduation Writing Assessment Requirement

Students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students complete the Plan A (Thesis) as their MS, Meteorology degree program culminating experience. The Plan B (Project) option is only offered under exceptional circumstances and students may not choose it themselves.

Plan A (Thesis)

This option requires an acceptable written research thesis and a successful oral presentation of the thesis. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. Students in the thesis option enroll in one unit of METR 285 and two units of METR 299 in their final semester. Students who complete the METR 299 but not its associated thesis enroll in the 1290R until both are completed.

Plan B (Project)

The Project option is open to students who can demonstrate to the Departmental Graduate Committee that they possess adequate professional meteorological experience to substitute for the research thesis. It is only offered under exceptional circumstances and students may not choose it themselves. Students approved for the Plan B option will select a suitable topic in meteorology on which to prepare a carefully documented written report in consultation with the project advisor. They will enroll in one unit of METR 285 and an additional two units of METR 298, Research in their final semester. Students who complete their final METR 298 but not its associated thesis enroll in the 1290R until both are completed.

Master's Requirements (30 units)

Core Courses (12 units)

- METR 202 - Research Methods in Meteorology 3 *unit(s)* (GWAR)
- METR 205 - Advanced Atmospheric and Climate Dynamics 3 *unit(s)*
- METR 215 - Advanced Physical Meteorology 3 *unit(s)*
- METR 240 - Numerical Modeling 3 *unit(s)*
or METR 241 - Parameterization in NWP

Research (6 units)

- METR 298 - Research 1-4 *unit(s)* (At least 3 units of METR 298 in each of two semesters.)

Advanced Courses (3 units)

Complete 3 units of the following selected in consultation with the graduate advisor:

- METR 209 - Adv Fire Behavior 3 *unit(s)*
- METR 241 - Parameterization in NWP 3 *unit(s)*
- METR 280 - Recent Developments in Meteorology 1-3 *unit(s)*

Electives (6 units)

6 units of the following selected in consultation with the graduate advisor:

Students may take 3 additional units of Advanced Courses as an elective. Students may also take approved elective(s) in physics, computer science, and/or mathematics. Elective units cannot include METR 285, METR 298 or METR 299.

- METR 121B - Dynamic Meteorology 3 *unit(s)*
- METR 123 - Advanced Climatology 3 *unit(s)*
- METR 125 - Physical Meteorology 3 *unit(s)*
- METR 130 - Boundary Layer Meteorology 3 *unit(s)*
- METR 131 - Air Pollution Meteorology 3 *unit(s)*
- METR 135 - The Global Carbon Cycle 3 *unit(s)*
- METR 150 - Computers in Meteorology III 3 *unit(s)*
- METR 155 - Remote Sensing 3 *unit(s)*
- METR 163 - Meteorological Instrumentation 3 *unit(s)*
- METR 164 - Introduction to Fire Weather 3 *unit(s)*
- METR 165 - Mountain Meteorology 3 *unit(s)*
- METR 172 - Mesoscale Meteorology 3 *unit(s)*
- METR 173 - Global Climate Modeling 3 *unit(s)*
- METR 185 - Special Topics 1-3 *unit(s)*

Culminating Experience (3 units)

Students in this program complete a Plan A (Thesis)

Plan A (Thesis)

- METR 285 - Colloquium 1 unit(s) (*Minimum one unit*)
- METR 299 - Master's Thesis 1-6 unit(s) (*2 units METR 299 in the final semester*)

Plan B (Project)

- METR 285 - Colloquium 1 unit(s) (*Minimum one unit*)
- METR 298 - Research 1-4 unit(s) (*2 units METR 298 in the final semester*)

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Physics, MS

- Admissions Requirements
- Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

At the core of all science, physics helps us understand chemical reactions, protein folding, the Earth's interior, and the life cycle of stars. Physicists invented the semiconductor, the laser, and the electron microscope. They play key roles in the design and operation of spacecraft and in the development of electronic and optical instrumentation. The Department of Physics and Astronomy faculty are experts in lasers and optics, computational physics, condensed matter, astrophysics, and physics education research. The department receives on average approximately \$1.8 million annually in external funding for sponsored research.

See the Department of Physics and Astronomy website.

Admissions Requirements

Candidates must meet all the university admissions requirements. Students can be admitted in either *classified* or *conditionally classified* standing:

- **Classified Standing:** Students admitted with classified standing will have an undergraduate degree in Physics or other STEM discipline with classes completed in upper-division Mechanics, Electricity and Magnetism and Quantum Mechanics.
- **Conditional Classified Standing:** Conditional acceptance means that the candidate must fulfill specific requirements in order to be eligible to apply for advancement to candidacy. These conditions will be stipulated as part of the acceptance agreement between the faculty adviser and the applicant. Failure to fulfill these requirements will result in disqualification from the program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Advancement to Candidacy

Each semester, students should consult with their graduate advisor to develop a schedule of courses. Students admitted as conditionally classified must satisfy the requirements listed in their acceptance agreement before advancing to candidacy. Students who have achieved classified standing in the master's degree curriculum must next advance to candidacy for the degree. A student may advance to candidacy after:

- Completing a minimum of 9 units of letter-graded work as a graduate student in 100- or 200-level courses acceptable to the department as well as fulfilling the other university requirements for advancement to candidacy.
- Candidacy includes successful completion of the Graduation Writing Assessment Requirement (GWAR), which is satisfied in this degree by the completion of PHYS 200W or PHYS 220E with a grade of "B" or better.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Program Graduation Requirements

Students must complete program requirements, which consists of 30 semester units of approved work. The student consults with their advisor to select a thesis or project topic.

Culminating Experience

Plan A (Thesis)

Thesis: The thesis must meet university requirements as stipulated in the Graduate Policies and Procedures section of this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's research committee chair with the assistance of the research committee. The MS thesis document must be approved by the student's research committee before submission. Typically, the research committee will provide the candidate feedback during the Thesis Defense and may request changes to the thesis before final approval. Oral Thesis Defense: All MS candidates are required to present a public seminar based on their research project.

Plan B (Project)

Written Project: The written project must be a manuscript describing the student's research project, written following a professional journal's format for submission. It will be written under the guidance of the candidate's research committee chair with the assistance of their research committee. The manuscript must be approved by the student's research committee. Typically, the committee will provide the candidate feedback during the Project Defense and may request changes to the manuscript before final approval.

Master's Requirements (30 units)

Graduation Writing Assessment Requirement (3 units)

Students must pass the Graduation Writing Assessment Requirement (GWAR). Complete one of the following:

- PHYS 200W - Research and Communication in Physics 3 *unit(s)* (GWAR)
- PHYS 220E - Graduate Optics Lab 3 *unit(s)* (GWAR)

Core Courses (12 units)

Choose 4 of the following:

- PHYS 205 - Advanced Dynamics 3 *unit(s)*
- PHYS 210 - Electromagnetic Theory 3 *unit(s)*
- PHYS 230 - Methods in Mathematical Physics 3 *unit(s)*
- PHYS 260 - Statistical Mechanics 3 *unit(s)*
- PHYS 263A - Quantum Theory 3 *unit(s)*

Electives (9 units)

- 6 *units* letter-graded 200-level physics
- 3 *units* 100- or 200-level physics, mathematics, science or engineering courses approved by the graduate advisor

Culminating Experience (6 units)

Complete one option (Plan A or Plan B):

Plan A (Thesis)

- PHYS 297 - Directed Research 1-5 *unit(s)* (5 *units* required)
- PHYS 299 - Master's Thesis 1-4 *unit(s)* (1 *unit* required)

Plan B (Project)

- PHYS 297 - Directed Research 1-5 *unit(s)* (2 *units* required)
- Additional 3 *units* of PHYS 297 or elective selected in consultation with graduate advisor
- PHYS 298 - Graduate Research Report 1-4 *unit(s)* (1 *unit* required)

Total Units Required (30 units)

Quantum Technology, MS

Quantum technologies exploit intricate quantum mechanical phenomena such as superposition and entanglement to obtain and process information in fundamentally new ways. 'Quantum technology' encompasses the fields of quantum computation, quantum sensing, and quantum communication, all of which are expected to revolutionize industrial computing technologies as well as pose new challenges and opportunities for national security and defense.

The interdisciplinary MS in Quantum Technology program at SJSU brings together faculty from the College of Science and College of Engineering to train the next generation of engineers and scientists for the workforce and research needs of the Quantum Information Science & Engineering enterprise. The program offers a modern education in quantum science, including the fundamentals of quantum information science and hands-on quantum software and hardware laboratory courses. Research experiences are integrated into the curriculum via project-based learning and a culminating master's thesis or research project. Students are trained in a broad set of skills across physics and engineering towards the convergent goal of becoming well-equipped for a career in quantum science

and technology. The MS in Quantum Technology is jointly offered by the Department of Physics and Astronomy and the Department of Electrical Engineering.

Admissions Requirements

Candidates must meet all of the university admission requirements. Students can be admitted in either classified or conditionally classified standing.

Classified Standing: applicants must have earned a Bachelor's degree in the sciences or engineering or other STEM discipline from an accredited institution with a minimum GPA of 3.0 (based on a 4.0 scale), and have completed classes in mechanics, linear algebra, electricity and magnetism, and computer programming or their equivalent.

Conditionally Classified Standing: Conditional acceptance means that the candidate does not meet one or more of the above requirements and must fulfill additional specific requirements, such as completing additional coursework, in order to be eligible to apply for advancement to candidacy. These conditions will be stipulated as part of the acceptance agreement between the faculty adviser and the applicant.

Applicant should submit a) a resume or curriculum vitae, b) 1-2 page statement of purpose that addresses (1) how your previous coursework, research, or employment prepares you for our program; and (2) how our program fits into your career interests and goals, and c) one signed letter of recommendation from an academic or employment reference.

Failure to fulfill these requirements will result in disqualification from the program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Advancement to Candidacy

Each semester, students should consult with their graduate advisor to develop a schedule of courses. Students admitted as conditionally classified must satisfy the requirements listed in their acceptance agreement before advancing to candidacy. Students who have achieved classified standing in the master's degree curriculum must next advance to candidacy for the degree. A student may advance to candidacy after:

- Completing a minimum of 9 units of letter-graded work as a graduate student in 100- or 200-level courses acceptable to the program as well as fulfilling the other university requirements for advancement to candidacy.
- Completing the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Course Requirements

Required courses must be passed with a grade of "B-" or better with an overall grade point average (GPA) of 3.0 or above at all times.

- Students who enter the program having already completed courses equivalent in level and content to any of those required for the degree may be allowed to substitute an appropriate alternative course upon advance approval by the MS Quantum Technology Program Director.
- Up to 9 credits toward the degree may be transferred from an outside institution with approval of the Program Director.
- A maximum of 9 upper-division undergraduate units can be applied toward the degree.
- Electives make up 12 units of the degree; at least 6 units of electives must be 200-level letter graded courses in physics or electrical engineering. For the additional 6 units of electives students may enroll in letter-graded 100- or 200-level physics, mathematics, science or engineering courses. All electives must be selected in consultation with the Program Director.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR), which is satisfied in this degree by the completion of PHYS 200W or PHYS 220E or EE 295 with a grade of "B" or better.

Culminating Experience

Students in the MS Quantum Technology program are required to complete one of the following options to fulfill the culminating experience requirements. The students should enroll in project/thesis courses matching the home department of their research advisor (Physics & Astronomy or Electrical Engineering). Students must complete 6 units of research and project courses to fulfill the degree requirements.

Plan A (Thesis)

Students choosing the thesis option must complete 3-5 units of directed research or project proposal courses (4-5 units of PHYS 297 or exactly 3 units of EE 299A) and 1-3 units of thesis writing (1-2 units of PHYS 299 or exactly 3 units of EE 299B) to fulfill the degree requirements. Students should enroll in the research and project courses corresponding to their research advisor's home department. Students are responsible for identifying a faculty thesis advisor and two additional thesis committee members. At least one faculty member must be full-time in PHYS or EE; this person will serve as the committee chair.

The written thesis must meet university requirements as stipulated in the Graduate Policies & Procedures section of this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis advisor with the assistance of the thesis committee. The MS thesis document must be approved by the thesis committee before submission. Candidates for the Quantum Technology MS degree must successfully pass a final oral thesis defense. The defense talk will be open to the public.

Plan B (Written Project)

Students choosing the written project option must complete 3-5 units of directed research or project proposal courses (4-5 units of PHYS 297 or exactly 3 units of EE 297A) and 1-3 units of a project writing course (1-2 units of PHYS 298 or exactly 3 units of EE 297B). Students are responsible for identifying a faculty project advisor and one additional project committee member. At least one faculty member must be full-time in EE or PHYS; this person will serve as the committee chair. Students must complete a public oral presentation of the project and the project manuscript must be approved by the student's committee.

Master's Requirements (30 units)

Core Courses (12 units)

- PHYS 161 - Fundamentals of Quantum Information 3 *unit(s)*

GWAR Course (3 units)

- PHYS 200W - Research and Communication in Physics 3 *unit(s)* (GWAR)
- PHYS 220E - Graduate Optics Lab 3 *unit(s)* (GWAR)
- EE 295 - Technical Writing - Engineering Ethics 3 *unit(s)* (GWAR)

Core Technical Courses (6 units)

Complete two courses from the following:

- PHYS 250 - Quantum Programming 3 *unit(s)*
- PHYS 253 - Quantum Many-Body Physics 3 *unit(s)*
- EE 274 - Quantum Computing Architectures 3 *unit(s)*

Electives (12 units)

Complete at least 2 200-level PHYS or EE courses. Up to 2 100-level elective courses may count towards the degree. Other mathematics, computer science, engineering or STEM courses may count with prior approval by the program director.

- EE 225 - Introduction to Quantum Computing 3 *unit(s)*
- EE 226 - Cryogenic Nanoelectronics 3 *unit(s)*
- EE 250 - Probabilities, Random Variables and Stochastic Processes 3 *unit(s)*
- PHYS 163 - Quantum Mechanics 3 *unit(s)*
- PHYS 208 - Introduction to Electro-Optics 3 *unit(s)*
- PHYS 240 - Computational Physics 3 *unit(s)*
- PHYS 263A - Quantum Theory 3 *unit(s)*
- PHYS 268 - Laser Spectroscopy 3 *unit(s)*
- PHYS 275 - Solid State Physics 3 *unit(s)*
- Other mathematics, computer science, engineering or STEM courses with prior approval.

Culminating Experience (6 units)

Complete one of the following 4 options. Students should enroll in project/thesis courses matching the home department of their research advisor.

Plan A (Thesis):

Advisor in Physics & Astronomy Department:

- PHYS 297 - Directed Research 1-5 *unit(s)* (4-5 *units* required)
- PHYS 299 - Master's Thesis 1-4 *unit(s)* (1-2 *units* required)

Advisor in Electrical Engineering Department:

- EE 299A - MSEE Thesis Proposal 3 *unit(s)*
- EE 299B - MSEE Thesis 3 *unit(s)*

Plan B (Project):

Advisor in Physics & Astronomy Department:

- PHYS 297 - Directed Research 1-5 unit(s) (4-5 units required)
- PHYS 298 - Graduate Research Report 1-4 unit(s) (1-2 units required)

Advisor in Electrical Engineering Department:

- EE 297A - MSEE Project Proposal 3 unit(s)
- EE 297B - MSEE Project 3 unit(s)

Total Units Required (30 units)

Science Education, MS

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The MS in Science Education, offered by the Science Education Program, is a flexible program designed for prospective and practicing K-12 science teachers, educators and specialists working in informal or outdoor education, community college science educators, and prospective science education PhD students. The curriculum is designed to augment and broaden the candidate's knowledge of current advances in science education research, and connect these findings to best classroom practices.

For more information, please visit the Science Education Programs website.

Qualified students who have earned a multiple or single-subject credential at San José State University may apply up to 9 units of approved credential coursework from the College of Education and 3 units of approved credential coursework from the College of Science to the MS Science Education degree. Students who earned their credential elsewhere may transfer up to 9 units of completed post-graduate coursework to the MS Science Education program at the discretion of the Science Education Graduate Coordinator.

Admissions Requirements

Minimum admission requirements to the Graduate Division are outlined in this catalog. In addition, classified standing requires an undergraduate major with a grade point average of 2.75.

- Demonstrated subject-matter competency in science, either through a baccalaureate degree in science or by passing the California Subject Examinations for Teachers (CSET) in General Science (215) and one Specialized Science CSET in either Life Science (217), Chemistry (218), Earth and Space Science (219) or Physics (220).
- Evidence of appropriate goal(s) and commitment to graduate-level study as demonstrated by a personal statement written by the applicant and letters of recommendation from two or more persons qualified to judge the applicant's potential as a graduate student.
- A minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage, if the applicant is from a country in which the native language is not English.
- Approval of the graduate advisor and/or graduate committee.

Requirements for Advancement to Graduate Candidacy

The student must satisfy general university requirements for advancement to candidacy as outlined in detail in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement

(GWAR) as a condition for advancement to candidacy. SCED 220 meets the GWAR requirement and is also a required course in this program, so no additional classes beyond the core courses for the MS Science Education are needed to meet this requirement.

Requirements for Graduation

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing SCED 220.

Culminating Experience

Plan A (with Thesis)

This option requires a thesis in science education approved by a master's committee of no fewer than three members. The thesis is credited under SCI 299 units. At the end of the program, the candidate must successfully deliver an oral seminar and defense of the thesis, cumulatively known as a culminating experience. The written thesis must be submitted to the master's advisor and master's committee for approval before being submitted to the Office of Graduate Studies for university approval. Note: this is an uncommon choice for our graduate students.

Plan B (with Project)

This option requires a project related to science education approved by a master's committee of no fewer than three members. The project is credited under SCED 298 units. At the end of the program, the candidate must successfully deliver an oral seminar and defense of the project, cumulatively known as a culminating experience. The written report of the project must be submitted to the master's advisor and master's committee. Note: the majority of our graduate students choose this path to graduation.

Master's Requirements (30 units)

Core Courses (9 units)

- SCED 273 - Secondary School Science 3 unit(s)
- SCED 205 - Methods of Research 3 unit(s)
- SCED 220 - Theories and Practices in Science Education 3 unit(s) (GWAR)

Electives (15 units)

- SCED 230 - Science Education Data Analysis 3 unit(s)
- SCED 255 - Advanced Natural Science 1-3 unit(s)
- SCED 285 - Seminar 3 unit(s)
- Other 100- or 200-level courses related to the student's MS project selected with advisor approval.

Approved 200-level Courses Include:

A maximum of 9 units taken through the College of Education may be transferred from the credential program. Additional College of Education units may be selected with advisor approval.

- EDTE 208 - Educational Sociology 3 unit(s)
- EDTE 224 - Seminar in Educational Psychology 3 unit(s)
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 unit(s)
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 unit(s)
- EDTE 282 - Assessment and Evaluation 3 unit(s)
- EDTE 294 - Research/Practices in Health and Special Education 3 unit(s)

Culminating Experience (6 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis)

- SCED 297 - Science Education Research 1-3 unit(s)
- SCI 299 - Master's Thesis 1-6 unit(s)
- Oral Defense

Plan B (Project)

- SCED 297 - Science Education Research 1-3 unit(s)
- SCED 298 - Research 1-6 unit(s)
- Oral Defense

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Coordinator and Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Statistics, MS

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (36 units)
- Program Learning Outcomes

The Master of Science in Statistics prepares students to become practicing statisticians in business, government and industry fields. It features theoretical and applied coursework in statistics and advanced statistical techniques, and its skills-based coursework emphasizes writing and communication skills and provides students with practical project experience. The program was developed in concert with industry and is designed to dovetail into professional career opportunities.

Persons with bachelor's degrees in engineering, the sciences, economics, business, the social sciences or other fields that use statistics are encouraged to apply. Those with bachelor's degrees in mathematics or statistics are welcome to apply for the program in order to advance their technical and theoretical skills.

Information about MS Statistics is available on the Department of Mathematics and Statistics website.

Admissions Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. See the Graduate Admissions website and this Catalog for general information about graduate admissions at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL Requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Information.

Requirements for Admission to Classified Standing

To enter this program with classified standing, an applicant must meet the minimum requirements for admission to the Graduate Division. Applicants must also have completed the following SJSU courses or their equivalents each with a grade of "B" or better (this coursework is not counted toward the MS degree):

- A calculus series through multiple integration and partial differentiation (equivalent to the SJSU courses MATH 30, MATH 31 and MATH 32);
- Linear algebra equivalent to MATH 39; and
- Introductory calculus-based probability and statistics equivalent to MATH 161A.

In addition, applicants must have two letters of recommendation submitted on their behalf.

Requirements for Admission to Conditionally Classified Standing

An applicant who meets the minimum requirements for admission to the Graduate Division but does not yet satisfy the mathematics and statistics coursework program requirements stated above may be admitted as Conditionally Classified. The student must complete additional coursework to make up the deficiency before beginning the program. The units earned from this additional coursework may not be counted towards the total number of units required for the MS degree. The individual admission letter will explain the required terms and conditions for attaining Classified standing.

Requirements for Advancement to Candidacy

To be advanced to candidacy for the MS Statistics degree:

- A student must meet the candidacy requirements as stated in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. The GWAR requirement is fulfilled by passing CS 200W.
- Complete MATH 163 and MATH 164, each with a grade of at least B.
- Complete at least 18 units towards the degree with at least a 3.0 average.
- Complete the Request for Candidacy and Graduate Degree Program form for the Master of Science degree. This form lists, among other things, all the coursework to be counted toward the master's degree. After the form has been

signed by the Graduate Coordinator, it is forwarded to the GAPE for final approval. Any subsequent changes to the student's program require approval from GAPE.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Program Graduation Requirements

Students in the MS Statistics program complete all courses in the program core, project experience or written exam, and culminating experience. Those choosing the Specialization in Machine Learning complete the electives MATH 251, MATH 252, and six units of additional electives selected in consultation with, and approved by, the Statistics Coordinator.

All other students complete MATH 261B and 9 units of electives selected in consultation with, and approved by, the Statistics Coordinator. The electives should form a coherent set of courses associated with the student's career goals. They may include a maximum of 6 units of MATH 203, MATH 288I, or MATH 298. Although they may be repeated, each of the courses: MATH 203, MATH 288i, MATH 297A, MATH 298, may count at most once towards the degree. The maximum number of 100-level undergraduate units that can be applied toward the master's degree is 12. The maximum number of units graded on a CR/NC basis that can be applied towards the degree is 12.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR). This requirement in the MS Statistics program is satisfied by completing CS 200W.

Culminating Experience

Project or Comprehensive Exam

Students in the MS, Statistics either complete a project course (MATH 203, MATH 288I, or MATH 298) or they take a comprehensive exam together with an extra elective course. In order for the project course or comprehensive exam to count towards the culminating experience, the student must have completed at least MATH 163 and MATH 164 (each with grade B or better) as well as MATH 261A (with grade C or better) at the time they begin their project or take the exam.

Master's Requirements (36 units)

Core Courses (21 units)

- CS 200W - Graduate Technical Writing 3 unit(s) (GWAR)
- MATH 163 - Probability Theory 3 unit(s)
- MATH 164 - Mathematical Statistics 3 unit(s)
- MATH 167R - Statistical Programming with R 3 unit(s)
- MATH 167PS - Introduction to Python Programming and SQL 3 unit(s)

- MATH 250 - Mathematical Data Visualization 3 *unit(s)*
- MATH 261A - Regression Theory and Methods 3 *unit(s)*

Electives or Specialization (12 units)

Complete 12 Units of Electives or the Specialization in Machine Learning. Specializations are a cluster of courses designed around a common theme and do not appear on transcripts or diplomas.

Electives

- Students not pursuing a specialization take MATH 261B and 9 units of electives selected in consultation with the graduate advisor 9 *unit(s)*
- MATH 261B - Design and Analysis of Experiments 3 *unit(s)*

Specialization in Machine Learning

- MATH 251 - Statistical and Machine Learning Classification 3 *unit(s)*
- MATH 252 - Cluster Analysis 3 *unit(s)*
 - 6 *units of additional electives selected in consultation with, and approved by, the Statistics Coordinator. 6 units(s)*

Culminating Experience (3 units)

Course Option

Complete one course from:

- MATH 203 - Applied Mathematics, Computation, and Statistics Projects 3 *unit(s)*
- MATH 288I - Statistics Internships 3 *unit(s)*
- MATH 298 - Special Study 1-4 *unit(s)* (3 *units required*)

Elective and Exam Option

One additional elective approved by the graduate advisor (3 units) and a comprehensive written exam on material from all of the following courses: MATH 163 - Probability Theory, MATH 164 - Mathematical Statistics, and MATH 261A - Regression Theory and Methods.

Total Units Required (36 units)

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Basic Certificate(s)

Fundamentals of Cybersecurity Certificate

The Fundamentals of Cybersecurity Certificate program, offered by the Department of Computer Science, aligns with the nationally defined knowledge areas in cybersecurity and information assurance, and prepares students with well-grounded fundamentals to become a professional in these areas.

University Basic Certificate Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

The Fundamentals of Cybersecurity Certificate requires a minimum GPA of 2.5 in basic certificate coursework in order to be awarded a certificate.

Core Requirements (18 units)

- CS 146 - Data Structures and Algorithms 3 *unit(s)*
- CS 149 - Operating Systems 3 *unit(s)*
- CS 157A - Introduction to Database Management Systems 3 *unit(s)*
- CS 158B - Computer Network Management 3 *unit(s)*
- CS 166 - Information Security 3 *unit(s)*

Complete One Course From:

- CS 158A - Computer Networks 3 *unit(s)*
- CMPE 148 - Computer Networks I 3 *unit(s)*

Total Units Required (18 units)

Advanced Certificate(s)

Clinical Genetic Molecular Biologist Scientist Training Program Certificate

Program Director: Michael Bowling

The Clinical Genetic Molecular Biologist Scientist Training Program, offered by the Department of Biological Sciences, is a 12-month postbaccalaureate training program that prepares students for the American Society for Clinical Pathology Technologist in Molecular Biology Certification Exam and State of California CGMBS licensure.

Student Admissions

Admission to the program will require:

- A bachelor's degree in genetics, molecular biology, or a related field with a minimum GPA of 2.8
- 18 semester units of biology including:
 - 3 semester units of general genetics
 - 3 semester units of molecular biology or cell biology
 - 12 additional units in basic biology, human genetics, cell biology, microbiology, molecular biology or related subjects
 - 10 semester units of chemistry, including biochemistry
- Of the above, at least 10 semester units of upper division biology or chemistry must have been completed with a grade of B or better
- Experience with molecular biology techniques, either through hands-on work (at least 500 work hours) or through classes (at least 9 semester units of laboratory credits in molecular biology, cell biology, microbiology or genetics related labs)
- Three (3) letters of recommendation
- Possession of a Clinical Genetic Molecular Biologist Scientist Trainee License
- Acceptance by the SJSU CGMBS Program admissions committee and a clinical affiliate
- Legal right to work in the United States
- Successfully passing a drug test and background check
- Proof of current immunity to Hepatitis B and other infectious diseases as required by our clinical affiliates
- For applicants with prerequisites or a degree from a foreign country, a course-by-course transcript evaluation is required from one of the following agencies:
 - National Association of Credential Evaluation Services (NACES)
 - Association of International Credential Evaluators, Inc (AICE)

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the

Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9 units)

- BIOL 291A - Introduction to Molecular Diagnostics I 3 *unit(s)*
- BIOL 291B - Introduction to Molecular Diagnostics II: Human Genetic Diseases and Detection 3 *unit(s)*
- MICR 293 - CGMBS Lab Management 3 *unit(s)*

Total Units Required (9 units)

Clinical Laboratory Scientist (CLS) Training Program Certificate

Program Director: Michael Bowling

The Clinical Laboratory Scientist (CLS) Training Program, offered by the Department of Biological Sciences, is a 12 month advanced certificate program that enables students to obtain a Medical Laboratory Scientist (MLS) Certificate from the American Society for Clinical Pathology (ASCP), as well as a California Clinical Laboratory Scientist License issued by the California Department of Public Health. The program is approximately 55 weeks long. Students spend 32 hours a week training on site at one of our hospital affiliates, and 8 hours a week taking part in formal coursework online. See the CLS website for application instructions.

Accreditation

The Clinical Lab Scientist Training Program is approved by Laboratory Field Services, a division of the State of California, Department of Public Health (www.cdph.ca.gov). The program is accredited by the National Accreditation Agency for Clinical Laboratory Science (NAACLS), and our graduated students are eligible to take the ASCP national certification exam. For more information, you can contact NAACLS directly at: 5600 N. River Road, Suite 720, Rosemont, IL 60018 or by calling 773-714-8880. You can also reach them on the web by emailing info@naaccls.org.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Core (24 units)

- MICR 291A - Advanced Hematology 4 *unit(s)*
- MICR 291B - Advanced Pathophysiology 4 *unit(s)*
- MICR 291C - Advanced Human Immunology 4 *unit(s)*
- MICR 291D - Advanced Medical Microbiology 4 *unit(s)*
- MICR 291E - Advanced Immunohematology 4 *unit(s)*
- MICR 291F - Molecular Based Diagnostic Techniques 4 *unit(s)*

Additional Core (21 units)

Three semesters of the following course:

- MICR 291G - Clinical Laboratory Management 4 *unit(s)*
- MICR 292 - Topics and Demonstrations in Clinical Laboratory Science 3 *unit(s)*

Total Units Required (45 units)

Cybersecurity: Core Technologies Certificate

The Department of Computer Science offers a 9-unit advanced (graduate) certificate program to students to advance knowledge of cybersecurity. The Cybersecurity: Core Technologies Certificate program aligns with nationally defined knowledge areas and prepares students to become a professional in cybersecurity and information assurance.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Core

With the permission, CS 158A may be substituted for one regular CS course that lists CS 158A as a prerequisite (including CS 158B, CS 258, and CS 268).

- CS 158A - Computer Networks 3 unit(s)
- CS 265 - Cryptography and Computer Security 3 unit(s)
- CS 266 - Topics in Information Security 3 unit(s)

Total Units Required (9 units)

Spartan Accelerated Graduate Education (SAGE) Scholars

Spartan Accelerated Graduate Education (SAGE) Programs programs are combined bachelor's and master's programs at SJSU (per University Policy F19-1). Sometimes they may also satisfy the requirements for a credential. Students in these programs pursue a bachelor's and master's degree simultaneously. These program allow students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

Mathematics, Integrated Teacher Education Program, BA + Single Subject Credential + Education Specialist Credential + Special Education, MA

The 4-year 120-unit BA in Mathematics, Integrated Teacher Education Program (BA Math ITEP) provides students with an in-depth understanding of the discipline of mathematics as well as insights and skills to analyze and work with middle school and high school urban communities to address the issues they face. The 5-year 144-unit Spartan Accelerated Graduate Education (SAGE) Scholars Math Program enables qualified BA Math ITEP students to simultaneously complete all the requirements for the BA, Mathematics Integrated Teacher Education Program, Math Single Subject Credential, Education Specialist Credential, and the Masters of Arts in Special Education. Students progress from undergraduate to credential to graduate status seamlessly with a simplified application process and no application fee. This SAGE Math Program in light of its integrated and combined design, can be completed in five years and provides significant cost and time savings for students. Students in the BA Math ITEP are not required to complete the SAGE Math Program.

Total SAGE Program Units (BA + Credential + Credential + MA) 144

For more information, contact the **Program Coordinator**: Lisa Simpson.

Admission Requirements

Most first time frosh and transfer students will become eligible to apply for the SAGE Math Program in the fall semester of Year 3. By program design, they are expected to formally advance to the two credential programs (i.e., single subject and mild/moderate education specialist) in the fall semester of Year 3. The SAGE Math Program includes the MA in Special Education with embedded Education Specialist credential in Mild Moderate Support Needs. Students who do not want to complete both the Ed Specialist Credential and the MA in SPED are not eligible for the MATH SAGE program and would be held to completing 30 units post-bac for the MA in SPED. Applications will be processed by the Mathematics Department and without an application fee. As per AA 2012-01, students will not need to apply formally for credential and graduate admission if accepted into the SAGE Math Program.

Students will be eligible to be admitted into the SAGE Math Program after:

- Completing all lower division coursework (students may apply in the semester where they are completing their final lower division coursework);
- Students must successfully complete a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of admission into the SAGE program;
- Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (WID 100W course) prior to admission into the SAGE program;
- Obtaining a Certificate of Clearance from the California Commission on Teacher Credentialing;
- Passing an admissions interview and submitting all admissions requirements into the credential programs; and
- Meeting the Basic Skills Requirement (through coursework, CBEST, or other alternative options).

Additional requirements include:

- A minimum GPA of 2.5 at time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher;
- Students must attend an information session facilitated by the BA Math ITEP Coordinator (Ferdie Rivera).
- Students meet with their undergraduate math advisor (Cheryl Roddick). The advisor must complete and sign the SAGE Admission and Transition Graduate Application Form (checking Step 1) and the SAGE Program Academic Career Planner (PACP). The form and planner should be routed to the registrar's office and a copy should be included in the student application to the department. In addition to the SAGE Math Application and PACP, the following documents are to be included in the application to the department.
- Student must include transcripts from each college attended if not viewable in the student's MySJSU account;
- Students must include 2 letters of recommendation addressing the applicant's qualifications and potential for success in the SAGE Math Program. All letters must be written within the past 2 years and must include the date the letter was written, the handwritten signature of the recommender, and contact information of the recommender;
- Students must include evidence of having completely met the Basic Skills Requirement through coursework, CBEST, or an alternative testing options by the fall semester in Year 4 before they engage in solo student teaching;
- To enter solo student teaching in the fall semester of Year 4, students must have completed at least 80% of subject matter competence requirements in mathematics with a cumulative GPA of 2.5; and
- Students must engage in an admissions interview with the BA Math ITEP Coordinator (Ferdie Rivera).

Applications will be processed by the Mathematics and Statistics Department and not through CalState Apply. They are processed without an application fee. All application documents should be collated into a single pdf and sent to the department via ferdinand.rivera@sjsu.edu.

Academic Standing

Continuation requirements: SAGE Math students must meet the same requirements to remain in the undergraduate, credential, and graduate programs as students in traditional pathways. Requirements for program continuation and advancement to candidacy in the credential and graduate programs, include:

- Successfully complete 39 units of combined credential and graduate coursework in the Department of Special Education with a minimum grade of B in each course taken;
 - Demonstrate aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments;
 - Meet with a graduate advisor (Lisa Simpson) to plan a formal course of study. The MA Special Education degree is individually designed to meet specific student objectives.
 - To convert to credential and graduate status, SAGE Math students must have completed the Basic Skills Requirement (coursework, CBEST, or equivalent);
 - To convert to graduate status, SAGE Math students must have completed all lower division and SJSU Studies (Areas V and S) requirements. If applicable, some students may be permitted to take or repeat a math course in Year 5;
 - To convert to graduate status, SAGE Math students must have completed all the requirements for a preliminary single subject credential in mathematics;
 - Clearly understand that there is no grade forgiveness for all graduate-level coursework; and
 - The graduate program must be approved by the Department of Special Education Graduate Coordinator (Lisa Simpson) before the SAGE Math student is considered a candidate for the MA Special Education degree.
- Graduation requirements: To be conferred the BA Math ITEP degree, SAGE Math students must meet the same undergraduate GPA requirement as all BA Math majors, including all Math ITEP course requirements and University and GE requirements. As credential students, SAGE Math students must meet all credential program requirements, which includes a grade of B in each course, successful student teaching, and subject matter competence in mathematics. Upon completion of the credential requirements, SAGE Math students must have achieved a SJSU cumulative GPA of 2.5 in their undergraduate work in order to be recommended for a preliminary credential. As graduate students, SAGE Math students must meet all graduate program requirements. Upon completion of the master's program requirements, students must have achieved a SJSU cumulative GPA of 3.0 in order to be recommended for a MA degree.

Program Requirements (144-146 units)

Mathematics, Integrated Teacher Education Program, BA (120-122 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (29 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ENGR 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B2, C, D/American Institutions (US123) 27 *unit(s)*
- Physical Education 2 *unit(s)*

Major Preparation (15-17 units)

- AAS 25/AFAM 25/CCS 25 - The Changing Majority: Power and Ethnicity in America 3 *unit(s)* (F)
- CHAD 60 - Child Development 3 *unit(s)* (E)
- ENGR 100W - Engineering Reports 3 *unit(s)* (WID+R)
- PHYS 50 - General Physics I: Mechanics 4 *unit(s)* (B1+B3)

- Programming Course: CMPE 30, CS 22A, CS 46A, CS 49C, CS 49J, MATH 167R, OR MATH 50 2-4 *unit(s)*

Major Requirements (43 units)

Lower Division Courses (16 units)

- MATH 30 - Calculus I 3 *unit(s)* (B4)
- MATH 31 - Calculus II 4 *unit(s)* (B4)
- MATH 32 - Calculus III 3 *unit(s)* (B4)
- MATH 39 - Linear Algebra I 3 *unit(s)*
- MATH 42 - Discrete Mathematics 3 *unit(s)*

Upper Division Core (27 units)

- MATH 102 - Secondary School Mathematics 3 *unit(s)*
- MATH 108 - Introduction to Abstract Mathematics and Proofs 3 *unit(s)*
- MATH 115 - Modern Geometry and Transformations 3 *unit(s)*
- MATH 126 - Theory of Numbers 3 *unit(s)*
- MATH 128A - Abstract Algebra I 3 *unit(s)*
- MATH 128B - Abstract Algebra II 3 *unit(s)* OR MATH 129B - Linear Algebra II 3 *unit(s)* OR MATH 131B - Introduction to Real Variables 3 *unit(s)*
- MATH 131A - Introduction to Analysis 3 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*

Credential Requirements (33 units)

- EDSE 102 - Intro to Language Development and Disability 3 *unit(s)* (S)
- EDSE 124 - Teach for Social Justice: Language & Disability 3 *unit(s)* (V)
- EDSE 215 - Assessing Students with Disabilities 3 *unit(s)*
- EDSE 218D - Teaching Students with Autism Spectrum Disorders 3 *unit(s)*
- EDSE 279 - Positive Behavior Support 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- MTED 184X - Student Teaching Phase I 4 *unit(s)*
- MTED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)*
- MTED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)*
- MTED 394 - Secondary Mathematics Methods 3 *unit(s)*

Education Specialist Credential + Special Education, MA (24 units)

- EDSE 216A - Literacy Instruction: Students with Disabilities 3 *unit(s)*
- EDSE 217A - Advanced Fieldwork in Mild Moderate Support Needs 6 *unit(s)*
- EDSE 220 - Advanced Research Projects in Special Education 3 *unit(s)*
- EDSE 228A - Topics in Collaboration and Transition 3 *unit(s)*
- EDSE 230A - Inclusive Pedagogy for Students with M/MSN 3 *unit(s)*
- EDSE 241 - Applying Assistive & Instructional Technology 3 *unit(s)*
- EDSE 285 - Intro to Action Research in Special Education 3 *unit(s)*

Total Units Required (144-146 units)

The standalone Mathematics, Integrated Teacher Education Program, BA requires the completion of EDSE 102, 215, EDSE 279, and EDSE 218D. These 12 units are considered to count toward the BA Math ITEP, Single Subject and Education Specialist Credentials, and the Special Education, MA degree.

College of Social Sciences

- Overview
- College of Social Sciences Student Success Center
- Centers and Institutes
- Programs
- Courses

Office: Washington Square Hall 103

Telephone: (408) 924-5300

Email: college-social-sciences@sjsu.edu

Website: www.sjsu.edu/socialsciences

Leadership:

Anne Marie Todd, Dean

Clifton M. Oyamoto, Associate Dean for Academic Programs and Student Success

Lois Takahashi, Associate Dean for Research and Faculty Success

Overview

Programs in the College of Social Sciences prepare students for work and life in Silicon Valley and a rapidly changing world. Our twelve departments provide training for careers in counseling, criminology, environmental restoration, computerized mapping, public administration, economic analysis, organizational communication, international relations, ergonomics, urban and regional planning, and countless other fields in business, government, teaching and human services. Major courses of study emphasize the contributions of the many cultures that form our community. Internships are encouraged to help students relate academic work to the opportunities and needs of this diverse region. Completion of one of our undergraduate majors also provides an excellent foundation for advanced graduate work in one of the disciplines or at a professional school such as law or business.

New technologies increasingly improve our instruction and link us to the innovative industry of our region and to the educational resources of the world, but personal interaction between students and faculty is still prized within the College of Social Sciences. Capable and interesting teachers, active student clubs and small classes provide ideal environments for learning. If you are interested in majoring in one of the social sciences, contact an advisor in one of our departments or the dean's office. A list of programs and courses can be found on each department page in the catalog.

- Department of African American Studies
- Department of Anthropology
- Department of Chicana and Chicano Studies
- Department of Communication Studies
- Department of Economics
- Department of Environmental Studies
- Department of History
- Department of Justice Studies
- Department of Political Science
- Department of Psychology
- Department of Sociology and Interdisciplinary Social Sciences

- Department of Urban and Regional Planning

Academic Advising and Student Success

College of Social Sciences Student Success Center

Office: Clark Hall 240

Telephone: 408-924-5363

Email: socsci-success@sjsu.edu

Website: www.sjsu.edu/socsci-ssc/

The College of Social Sciences Success Center (CoSS SSC) is dedicated to providing a welcoming and inclusive advising environment for students. We are committed to student success, promoting lifelong learning, and providing students the tools to make informed decisions about their academic goals. We provide General Education advising for undergraduate students majoring or intending to major in any of the departments in the College of Social Sciences (CoSS). We are committed to helping you develop a clear path to graduation and supporting your academic success.

Centers and Institutes

The Centers and Institutes of the College of Social Sciences further enriched the educational, research and training opportunities provided to our students and faculty.:

- The Spatial Analytics and Visualization (SAVI) Center uses the power of geography and Geographic Information Science to produce impactful research and facilitate knowledge exchange by organizing public events, and bringing together scholars and professionals.
- Burdick Military History Project supports the study and teaching of military history through public lectures, the Veterans Oral History Project, and its specialized collection of materials relating to military history. Contact the Department of History.
- The Center for Economic Education supports high school teachers interested in developing Advanced Placement (AP) courses or improving existing AP Economics courses. Contact the Department of Economics.
- The SJSU Communication Center offers academic support for students seeking help with their public speaking, writing, and general communication skills through workshops and individual tutoring.
- College of Social Sciences Ethnic Studies Collaborative works to strengthen African American Studies, Asian American Studies, Chicana and Chicano Studies, and Native American and Indigenous Studies programs at SJSU and throughout the CSU. See the CSU Task Force on the Advancement of Ethnic Studies report for more information.
- East Asian Regional Materials and Resources Center (EARMARC) provides audio-visual materials for high school and college students in Northern California. The video and film library currently holds about 200 videos and reels, most of which are related to China or Japan. The collection also includes slide sets and audio materials. Almost all areas of East Asian society and culture are covered.
- The Environmental Resource Center (ERC) is run by student directors and supervised by a faculty advisor. In addition to organizing behavior changes via on campus events, the ERC is working to move our campus towards sustainable use of water, energy and materials.
- The Human Rights Institute is an "Organizational Research and Training Unit" under the California State University system that specializes in human rights research, journalism, and policy design. HRI students and faculty study

pressing social problems and work with community organizations, stakeholders, and policy makers to inform and design solutions according to relevant scholarship, human rights law, and international best practices. Further, the SJSU HRI is building the Human Rights News Network—a source of original and relevant human rights reporting from students, faculty, and Institute partners.

- The Institute for Metropolitan Studies is an interdisciplinary center for research, service, and public programming with a focus on issues of significance to San José and the greater San Francisco Bay Area. It engages in the issues facing our region through hosting powerful public events, often in collaboration with other institutions and community groups.
- The Institute for Public Affairs and Civic Engagement (IPACE) is designed to facilitate the study of politics and public policy in the Silicon Valley and the civic engagement of students through internships, service learning, and sponsorship of research talks led by SJSU faculty and members of the broader community.
- The Record Clearance Project provides presentations regarding expungement law and employment rights of people with criminal convictions, LiveScan fingerprinting, Speed Screening interviews and others.
- The Sourisseau Academy for State and Local History promotes a better understanding of California's state and local history, with an emphasis on the history of Santa Clara Valley, through graduate scholarships and collections of historical source materials.

Programs

Teaching Preparation Programs

- Social Science, Preparation for Teaching (Single Subject), BA - This major is designed for students interested in teaching history, political science (government), economics, or ethnic studies in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Social Science Preparation for Teaching. The BA Social Science Preparation for Teaching, offered by the Department of History, is an approved program by the California Commission on Teacher Credentialing (CCTC). Students completing the program qualify for a waiver of the subject matter examination (CSET for Social Science) required to earn a teaching credential.
- The Environmental Studies, Preparation for Teaching, BA offered by the Department of Environmental Studies is designed for students interested in teaching in elementary or middle school. The coursework satisfies University requirements for a BA in Environmental Studies and is a program approved by the Teacher Credentialing in the State of California (CTC) for waiver of the Commission-approved subject matter examination (CSET for Multiple Subjects). Thus, students completing this program are eligible to apply for the Multiple Subject Teaching Credential (K-8) program.
- African American Studies, BA + Single Subject Credential in Social Science + Teaching, MAT SAGE Program - This Spartan Accelerated Graduate Education (SAGE) Scholars Program prepares students to teach History, Social Science, and Ethnic Studies in California public high schools. The Department of African American Studies provides an interdisciplinary curriculum and comprehensive liberal arts education by training students to appreciate diversity and multicultural American society. As juniors, African American Studies, BA majors are eligible to apply for a SAGE Scholars program that allows them to be concurrently enrolled in the Single Subject Credential - Social Science and Teaching, MAT programs (with an optional Spanish bilingual authorization) as an undergraduate. This combined degree pathway can be completed in five years.
- Chicana and Chicano Studies, BA + Single Subject Credential in Social Science + Teaching, MAT - This Spartan Accelerated Graduate Education (SAGE) Program prepares students to teach History, Social Science, and Ethnic Studies in California public high schools. The Department of Chicana and Chicano Studies provides an interdisciplinary curriculum and comprehensive liberal arts education by training students to appreciate diversity and multicultural American society. As juniors, Chicana and Chicano Studies, BA are eligible to apply for a SAGE

Scholars program that allows them to be concurrently enrolled in the Single Subject Credential - Social Science and Teaching, MAT programs (with an optional Spanish bilingual authorization) as an undergraduate. This combined degree pathway can be completed in five years.

Undergraduate Major(s)

African American Studies, BA

The Department of African American Studies aims to provide students throughout the University with critical, interdisciplinary, and specialized knowledge about African and African American populations and its communities. Our curriculum, programming, and scholarship examines, explores, and engages the intellectual traditions within the African Diaspora from multiple perspectives-historical, cultural, philosophical, political, social, and theoretical-in service to its students and society.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Requirements	42
University Electives	40
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions

Complete one major-specific 6 unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but the sequence listed below also fulfills major requirements.

African American Studies

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (42 units)

- Any 100W (Recommend AFAM 100W - Writing Workshop 3 *unit(s)*) OR COMM 100W - Writing Workshop: Writing for Influence OR SOCI 100W - Writing Workshop 3 *unit(s)* (All WID)
- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)
- AFAM 22 - The Humanities in African American Culture 3 *unit(s)*
- AFAM 40 - African Origins 3 *unit(s)* or AFAM 111 - African Nations: History, Politics, and Culture 3 *unit(s)*
- AFAM 134 - The Black Civil Rights Movements 3 *unit(s)* (F)
- AFAM 151 - Race, Class and the Environment 3 *unit(s)* (R)
- AFAM 152 - Black Feminisms 3 *unit(s)* (S)

Major Electives (18 units)

Complete six courses from:

- AFAM 102 - Black Music 3 *unit(s)*
- AFAM 105 - Race and Health Inequities in the US 3 *unit(s)*
- AFAM 106 - Black Diasporas 3 *unit(s)*
- AFAM 110 - Race and Education in the US 3 *unit(s)*
- AFAM 111 - African Nations: History, Politics, and Culture 3 *unit(s)*
- AFAM 112 - Black Immigrant Communities 3 *unit(s)*

- AFAM 115 - The Great Migration and Black Communities 3 unit(s)
- AFAM 120 - Sociology of Black Communities 3 unit(s)
- AFAM 125 - Black Kinship in the US - Black Families Past and Present 3 unit(s)
- AFAM 130 - Black Perspectives in Psychology - Black Psychology 3 unit(s)
- AFAM 137 - Introduction to Black Religion 3 unit(s)
- AFAM 142 - Race, Justice, and the Legal System 3 unit(s)
- AFAM 145 - Race, Policy, and Urban Cities 4 unit(s)
- AFAM 156 - Black Women's Writing 3 unit(s)
- AFAM 157 - Race, Tech, and Global Futures 3 unit(s)
- AFAM 158 - Race, Sport, Activism & Social Movements 3 unit(s) (F)
- AFAM 159 - The Racial Wealth Gap in America 3 unit(s) (S)
- AFAM 160 - Black Political Power in the US 3 unit(s)
- AFAM 161 - Black Representations in Media and New Technology 3 unit(s)
- AFAM 162 - The Aesthetics of Hip-Hop 3 unit(s) (F)
- AFAM 165 - Topics in Ethnic American Literature 4 unit(s)
- AFAM 166 - Black Women's Histories 3 unit(s)
- AFAM 170 - Interracial Intimacies and Mixed Race Identity in the U.S. 3 unit(s) (S)
- AFAM 180 - Individual Studies 1-4 unit(s)
- AFAM 184 - Directed Reading 1-4 unit(s)
- AFAM 185 - Special Topics in African American Studies 3 unit(s)
- AFAM 190 - Internship in Community Development 1-4 unit(s)
- AFAM 192 - International Program Studies 1-6 unit(s)

University Electives (40 units)

At least 4 units must be Upper Division. A minor or double major is recommended (selected with advisor approval).

Total Units Required (120 units)

Anthropology, BA

The Department of Anthropology provides students with an integrated anthropological experience through coursework in archeology, cultural anthropology, and physical anthropology. This broad training prepares our students for a wide range of careers in diverse fields including project management, health care, education, immigrant services, heritage management, museum curation, business and industry, and much more. Anthropology majors learn many useful skills including cultural competency, critical thinking, research design, and professional writing--skills that are increasing in demand in private, public, and non-profit organizations.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	3
Major Requirements	42
University Electives	31

Total

120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Core Lower Division General Education (24 units)

Of the 39 units required by the university, 15 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)

- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Major Preparation (3 units)

Complete three units from:

- SOCI 15 - Statistical Applications in the Social Sciences 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)
- GEOG 12 - World Regional Geography 3 *unit(s)* (D)

Major Requirements (42 units)

Core Courses (15 units)

- ANTH 11 - Cultural Anthropology 3 *unit(s)* (D)
- ANTH 12 - Introduction to Human Evolution 3 *unit(s)* (B2)
- ANTH 13 - Archaeology 3 *unit(s)* (A3)
- ANTH 131 - Theories of Culture 3 *unit(s)*
- ANTH 191 - Frontiers of Anthropology 3 *unit(s)*

Research Methods (3 units)

Complete three units from:

- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- ANTH 155 - Forensic Osteology 3 *unit(s)*
- ANTH 168 - Archaeological Methodology 3 *unit(s)*
- ANTH 169 - Archaeological Site Excavation 3 *unit(s)*

Cultural Anthropology (6 units)

Complete six units from:

- ANTH 102 - Silicon Valley Connections 3 *unit(s)*
- ANTH 105 - Applied Anthropology 3 *unit(s)*
- ANTH 107 - Eating Culture: The Anthropology of Food 3 *unit(s)*
- ANTH 108 - Medical Anthropology 3 *unit(s)*
- ANTH 125 - Urban Anthropology 3 *unit(s)*
- ANTH 129 - Environmental Anthropology 3 *unit(s)*
- ANTH 130 - Kin, Kith, and Community: The Anthropology of Social Organization 3 *unit(s)*
- ANTH 132 - Creating Built Worlds 3 *unit(s)*
- ANTH 133 - Organizational Cultures 3 *unit(s)*
- ANTH 134 - Systemic Leadership 3 *unit(s)*
- ANTH 136 - Thought Control in Contemporary Society 3 *unit(s)*
- ANTH 142 - Culture in Mind 3 *unit(s)*
- ANTH 143 - Culture and Adaptation 3 *unit(s)*
- ANTH 144 - Gifts, Markets, and Power 3 *unit(s)*
- ANTH 148 - Religion and Anthropology 3 *unit(s)*
- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- ANTH 173 - Multimedia Anthropology 3 *unit(s)*
- ANTH 175 - Anthropology of Native America 3 *unit(s)*
- ANTH 176 - Native California: Past and Present 3 *unit(s)*
- ANTH 177 - Anthropology of Asia 3 *unit(s)*

Archaeology (6 units)

Complete six units from:

- ANTH 143 - Culture and Adaptation 3 *unit(s)*
- ANTH 161 - Old World Civilizations 3 *unit(s)*
- ANTH 162 - Inca, Aztec and Maya Civilization 3 *unit(s)*
- ANTH 164 - North America before 1492 3 *unit(s)*
- ANTH 165 - Historical Archaeology 3 *unit(s)*
- ANTH 168 - Archaeological Methodology 3 *unit(s)*
- ANTH 169 - Archaeological Site Excavation 3 *unit(s)*

Physical Anthropology (6 units)

Complete six units from:

- ANTH 151 - Modernity and Disease 3 *unit(s)*
- ANTH 152 - Becoming Human 3 *unit(s)*
- ANTH 154 - Monkeys, Apes and Humans 3 *unit(s)*

- ANTH 155 - Forensic Osteology 3 unit(s)
- ANTH 156 - Bioarchaeology 3 unit(s)
- ANTH 157 - Forensic Anthropology 3 unit(s)
- ANTH 159 - Mummies 3 unit(s)

Anthropology Electives (6 units)

All current upper-division anthropology courses, except SJSU Studies Area R, S, or V courses, and any of the following courses as appropriate and with approval of advisor.

Double major and second baccalaureate requirements are the same as for the regular major except only 6 upper division anthropology electives are needed for a total of 30 units.

- ANTH 180 - Individual Studies 1-4 unit(s)
- ANTH 184 - Directed Reading 1-4 unit(s)
- ANTH 190 - Designing Research 3 unit(s)
- ANTH 195 - Anthropology Practicum 1-6 unit(s)

University Electives (31 units)

Total Units Required (120 units)

Anthropology, BA (SJSU Online)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

The Department of Anthropology provides students with an integrated anthropological experience through coursework in archeology, cultural anthropology, and physical anthropology. This broad training prepares our students for a wide range of careers in diverse fields including project management, health care, education, immigrant services, heritage management, museum curation, business and industry, and much more. Anthropology majors learn many useful skills including cultural competency, critical thinking, research design, and professional writing-skills that are increasing in demand in private, public, and non-profit organizations.

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Graduation Requirements	12

Major Requirements	33
University Electives	15
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units).
- All four CSU-approved Basics Skills courses must be completed with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
- GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.
- Completion of at least 12 units of the following courses (or equivalents):

ANTH	11	-	Cultural	Anthropology 3	<i>unit(s) (D)</i>
ANTH	12	-	Introduction	to Human	Evolution 3 <i>unit(s) (B2)</i>
ANTH		13		-	Archaeology (A3)
Statistics (STAT 95, SOCI/SOCS 15, UNVS 15, or equivalent) (B4)					

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education Requirements, American Institutions, Graduation Writing Assessment and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Major Requirements (33 units)

Core Courses (6 units)

- ANTH 131 - Theories of Culture 3 *unit(s)*
- ANTH 191 - Frontiers of Anthropology 3 *unit(s)*

Research Methods (3 units)

Complete One Course:

- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- ANTH 155 - Forensic Osteology 3 *unit(s)*
- ANTH 168 - Archaeological Methodology 3 *unit(s)*
- ANTH 169 - Archaeological Site Excavation 3 *unit(s)*

Cultural Anthropology (6 units)

Complete Two Courses:

- ANTH 102 - Silicon Valley Connections 3 *unit(s)*
- ANTH 105 - Applied Anthropology 3 *unit(s)*
- ANTH 107 - Eating Culture: The Anthropology of Food 3 *unit(s)*
- ANTH 108 - Medical Anthropology 3 *unit(s)*
- ANTH 125 - Urban Anthropology 3 *unit(s)*
- ANTH 129 - Environmental Anthropology 3 *unit(s)*
- ANTH 130 - Kin, Kith, and Community: The Anthropology of Social Organization 3 *unit(s)*
- ANTH 132 - Creating Built Worlds 3 *unit(s)*

- ANTH 133 - Organizational Cultures 3 *unit(s)*
- ANTH 134 - Systemic Leadership 3 *unit(s)*
- ANTH 136 - Thought Control in Contemporary Society 3 *unit(s)*
- ANTH 142 - Culture in Mind 3 *unit(s)*
- ANTH 143 - Culture and Adaptation 3 *unit(s)*
- ANTH 144 - Gifts, Markets, and Power 3 *unit(s)*
- ANTH 148 - Religion and Anthropology 3 *unit(s)*
- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- ANTH 173 - Multimedia Anthropology 3 *unit(s)*
- ANTH 175 - Anthropology of Native America 3 *unit(s)*
- ANTH 176 - Native California: Past and Present 3 *unit(s)*
- ANTH 177 - Anthropology of Asia 3 *unit(s)*

Archaeology (6 units)

Complete Two Courses:

- ANTH 143 - Culture and Adaptation 3 *unit(s)*
- ANTH 161 - Old World Civilizations 3 *unit(s)*
- ANTH 162 - Inca, Aztec and Maya Civilization 3 *unit(s)*
- ANTH 164 - North America before 1492 3 *unit(s)*
- ANTH 165 - Historical Archaeology 3 *unit(s)*
- ANTH 168 - Archaeological Methodology 3 *unit(s)*
- ANTH 169 - Archaeological Site Excavation 3 *unit(s)*

Physical Anthropology (6 units)

Complete Two Courses:

- ANTH 151 - Modernity and Disease 3 *unit(s)*
- ANTH 152 - Becoming Human 3 *unit(s)*
- ANTH 154 - Monkeys, Apes and Humans 3 *unit(s)*
- ANTH 155 - Forensic Osteology 3 *unit(s)*
- ANTH 156 - Bioarchaeology 3 *unit(s)*
- ANTH 157 - Forensic Anthropology 3 *unit(s)*
- ANTH 159 - Mummies 3 *unit(s)*

Anthropology Electives (6 units)

All current upper-division anthropology courses, except SJSU Studies Area R, S, or V courses.

University Electives (15 units)

Total Units Required (120 units)

Asian American Studies, BA

The Asian American Studies (AAS) program, offered by the Department of Sociology and Interdisciplinary Social Sciences, provides an interdisciplinary liberal arts education. The program offers a Bachelor of Arts major and a minor in Asian American Studies - both are designed to develop student skills in critical analysis, writing, communication and reasoning, while retrieving, documenting and analyzing the diverse artistic, economic, social, political and historical experiences of Asian Americans in the United States. In addition to foundational courses on history, theory, and methods, the degree encompasses three different areas of emphasis: Social Sciences, Humanities & Arts, and other critical interdisciplinary studies in Ethnic Studies and Women, Gender and Sexuality Studies.

The mission of the AAS degree program is to empower students to create a more socially-just and equitable society. AAS students will meet this vision by applying interdisciplinary theories into action, cultivating critical thought, and serving Asian American communities. Specifically, AAS brings together perspectives from different fields in the creative arts, humanities and social sciences while at the same time seeking to maintain a commitment to activism and to the needs of our communities.

Summary of Degree Units

University Graduation Requirements	44
Major Requirements	45
University Electives	31
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but the sequence listed below may also fulfill major requirements.

Consult with a major advisor to select the appropriate sequence.

Asian American Studies

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (45 units)

Core Courses (18 units)

- AAS 1 - Introduction to Asian American Studies 3 *unit(s)* (F)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D) (*American Institutions US123 ONLY when taken in sequence with AAS 33A*)
- AAS 175 - Asian American Communities 3 *unit(s)* (S)
- AAS 184 - Ethnic Studies Theory 3 *unit(s)*
- AAS 185 - Ethnic Studies Methodologies 3 *unit(s)*

Writing in the Disciplines (WID) Course

Complete one course:

- AFAM 100W - Writing Workshop 3 *unit(s)* (WID)
- SOCI 100W - Writing Workshop 3 *unit(s)* (WID)

Major Electives (27 units)

Asian American Studies (12 units)

Complete four courses:

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)*
- AAS 125 - Filipino Experience in the United States 3 *unit(s)*
- AAS 158 - Asian American Intersections 3 *unit(s)*
- AAS 159 - Asian American Media Representation and Popular Culture 3 *unit(s)*
- AAS 170 - Special Topics in Asian American Studies 3 *unit(s)*
- AAS 180 - Individual Studies 1-4 *unit(s)*
- AAS 186 - Southeast Asian Diaspora in the US 3 *unit(s)*
- AAS 190 - Internship 1-4 *unit(s)*

African American Studies (3 units)

Complete one course:

- AFAM 105 - Race and Health Inequities in the US 3 *unit(s)*
- AFAM 110 - Race and Education in the US 3 *unit(s)*
- AFAM 115 - The Great Migration and Black Communities 3 *unit(s)*
- AFAM 120 - Sociology of Black Communities 3 *unit(s)*
- AFAM 125 - Black Kinship in the US - Black Families Past and Present 3 *unit(s)*
- AFAM 130 - Black Perspectives in Psychology - Black Psychology 3 *unit(s)*
- AFAM 134 - The Black Civil Rights Movements 3 *unit(s)*
- AFAM 137 - Introduction to Black Religion 3 *unit(s)*
- AFAM 142 - Race, Justice, and the Legal System 3 *unit(s)*
- AFAM 145 - Race, Policy, and Urban Cities 4 *unit(s)*
- AFAM 151 - Race, Class and the Environment 3 *unit(s)*
- AFAM 152 - Black Feminisms 3 *unit(s)*
- AFAM 156 - Black Women's Writing 3 *unit(s)*
- AFAM 157 - Race, Tech, and Global Futures 3 *unit(s)*
- AFAM 158 - Race, Sport, Activism & Social Movements 3 *unit(s)*
- AFAM 159 - The Racial Wealth Gap in America 3 *unit(s)*
- AFAM 161 - Black Representations in Media and New Technology 3 *unit(s)*
- AFAM 162 - The Aesthetics of Hip-Hop 3 *unit(s)*

Arts and Humanities (3 units)

Complete one course:

- ENGL 123C - Literatures of the Pacific 3 *unit(s)*
- ENGL 156 - Black Women's Writing 3 *unit(s)* (*Cross listed as AFAM/WGSS 156*)
- ENGL 165 - Black American Literatures 4 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)*
- LING 129 - Culture, Language and Ethnicity in the U.S. 3 *unit(s)*
- PHIL 117 - Philosophy of Race 3 *unit(s)*
- RELS 137 - Introduction to Black Religion 3 *unit(s)*

Chicana/Chicano Studies (3 units)

Complete one course:

- CCS 105 - Chicanos: United States/Mexico Relations 3 *unit(s)*
- CCS 115 - Chicana/o Families 3 *unit(s)*
- CCS 120 - Political Economy and Chicana/o Communities 3 *unit(s)*
- CCS 127 - Chicanas/os and the Criminal Justice System 3 *unit(s)*
- CCS 130 - Chicanas and Chicanos in American Society 3 *unit(s)*
- CCS 135 - Contemporary Chicana/o Issues 3 *unit(s)*
- CCS 144 - Chicana/o Literature 3 *unit(s)*
- CCS 145 - Chicana/o Folklife and Popular Culture 3 *unit(s)*
- CCS 147 - Music in Mexican America 3 *unit(s)*
- CCS 150 - Research Methods 3 *unit(s)*
- CCS 151 - Theory in Chicana/o Studies 3 *unit(s)*
- CCS 152 - The Story of Chicano Spanish 3 *unit(s)*
- CCS 160 - Gender and Sexuality in the Chicana/o Community 3 *unit(s)*
- CCS 170 - Chicana/Chicano Film 3 *unit(s)*
- CCS 175 - Human Migrations: Global Reach 3 *unit(s)*

Women, Gender and Sexuality Studies (3 units)

Complete one course:

- WGSS 101 - Sex, Power, and Politics 3 *unit(s)*
- WGSS 102 - The Global Study of Women 3 *unit(s)*
- WGSS 112 - Women in the Global Economy 3 *unit(s)*
- WGSS 114 - Politics of Mothering and Reproduction 3 *unit(s)*
- WGSS 120 - Special Topics in Women's Studies 3 *unit(s)*
- WGSS 135 - Trans Studies: Identities, Embodiment, & Politics 3 *unit(s)*
- WGSS 156 - Black Women's Writing 3 *unit(s)* (*Crosslisted as AFAM/ENGL 156*)
- WGSS 160 - Queering Gender, Race, and Class 3 *unit(s)*
- WGSS 169 - Sexualities and the Body 3 *unit(s)*

Additional Elective (3 units)

Complete one course:

- COMM 126F - Race and Performance 4 *unit(s)*
- COMM 174 - Intercultural Comm and Structural Inequalities 3 *unit(s)* (S)
- ENVS 151 - Race, Class and the Environment 3 *unit(s)*
- JS 132 - Race, Gender, Inequality and the Law 3 *unit(s)* (S)
- SOCI 118 - Sociology of Human Rights and Social Justice 3 *unit(s)*
- SOCI 142 - Critical Native American Studies 3 *unit(s)*
- SOCI 160 - Immigration and Identity 3 *unit(s)*
- SOCI 162 - Race and Ethnic Relations 3 *unit(s)* (S)

University Electives (31 units)

Students are encouraged to enroll in a minor or second major.

Total Units Required (120 units)

Behavioral Science, BA

Behavioral Science majors develop an interdisciplinary perspective on human behavior and an understanding of psychological, social and cultural dimensions to being human in a complex society. Offered cooperatively by the Departments of Anthropology, Psychology and Sociology, the Behavioral Science Program is housed in the Department of Anthropology, which oversees academic advising. The program prepares graduates for a variety of jobs that require working with social science data and with people. Many of our alumni have pursued careers in human resources, social work, counseling, sales and marketing and law enforcement.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	50
Major Requirements	48
University Electives	22
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Major Requirements (48 units)

Core Courses (15 units)

- ANTH 11 - Cultural Anthropology 3 *unit(s)* (D)
- ANTH 193 - Behavioral Science in Practice 3 *unit(s)* (ANTH 193 can also be taken as PSYC 193 and SOCI 193)
- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- SOCI 1 - Introduction to Sociology 3 *unit(s)* (D)

Statistics Course

Complete one course:

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)
- SOCI 15 - Statistical Applications in the Social Sciences 3 *unit(s)* (B4) (SOCI 15 can also be taken as SOCS 15)

Methods Requirement

Students must complete at least one of the following courses:

A 3-unit maximum of individual studies may be used to meet the degree requirements.

- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- ANTH 165 - Historical Archaeology 3 *unit(s)*
- PSYC 18 - Introduction to Research Methods 3 *unit(s)*
- PSYC 120 - Advanced Research Methods and Design 4 *unit(s)*
- SOCI 104 - Quantitative Research Methods 3 *unit(s)*

Anthropology (9 units)

Three courses (at least 2 upper division) which may include

- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- ANTH 165 - Historical Archaeology 3 *unit(s)*
- ANTH 168 - Archaeological Methodology 3 *unit(s)*

Psychology (9 units)

Three courses in psychology (at least 2 upper division) which may include

- PSYC 18 - Introduction to Research Methods 3 *unit(s)*
- PSYC 120 - Advanced Research Methods and Design 4 *unit(s)*

Sociology (9 units)

- SOCI 101 - Social Theory 3 *unit(s)*

Two Additional Upper Division Sociology Courses

Two additional upper division sociology courses which may include:

- SOCI 104 - Quantitative Research Methods 3 *unit(s)*

Area of Specialization (6 units)

Specializations are a cluster of courses used by departments for advising purposes. Specializations will not appear on transcripts or diplomas. Please see advisor for more details.

Two additional upper division anthropology, psychology, or sociology courses, except SJSU Studies Area R, S, or V courses, approved by Behavioral Science advisor.

University Electives (22 units)

At least one unit must be Upper Division course.

Total Units Required (120 units)

Chicana and Chicano Studies, BA

The BA in Chicana and Chicano Studies, offered by the Department of Chicana and Chicano Studies, provides students an in-depth understanding of the discipline of Chicana/o Studies as well as skills and expertise to analyze social, economic, and political issues within and faced by Chicanx-Latinx communities. The degree provides three interrelated areas of specialization that also prepare students for work and careers in several occupations: Cultural & Creative Expression, Institutions & Community Engagement, and Transnationalism & Global Relations.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	50
Major Requirements	40
University Electives	30
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with the major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but the sequence listed below is recommended.

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government *3 unit(s) (D)*
- CCS 10B - Mexican Americans and the Development of U.S. History and Government *3 unit(s) (D+US123)*

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Major Requirements (40 units)

Lower Division Core (4 units)

- CCS 1 - Introduction to Chicana and Chicano Studies *3 unit(s) (F)*
- CCS 2 - Library Studies *1 unit(s)*

Upper Division Core (15 units)

- CCS 125 - Chicana/o Community Studies 3 *unit(s)*
- CCS 135 - Contemporary Chicana/o Issues 3 *unit(s)*
- CCS 150 - Research Methods 3 *unit(s)*
- CCS 151 - Theory in Chicana/o Studies 3 *unit(s)*
- CCS 190 - Chicana and Chicano Studies Capstone 3 *unit(s)*

Additional Upper Division Courses (21 units)

All Majors will select a specific specialization area and will take 9 units in that area and 6 units in each of the other two areas for a total of 21 units.

Cultural and Creative Expression

- CCS 144 - Chicana/o Literature 3 *unit(s)*
- CCS 145 - Chicana/o Folklife and Popular Culture 3 *unit(s)*
- CCS 147 - Music in Mexican America 3 *unit(s)*
- CCS 152 - The Story of Chicano Spanish 3 *unit(s)*
- CCS 170 - Chicana/Chicano Film 3 *unit(s)*

Institutions and Community Engagement

- CCS 115 - Chicana/o Families 3 *unit(s)*
- CCS 127 - Chicanas/os and the Criminal Justice System 3 *unit(s)*
- CCS 185 - Teaching in a Diverse Society 3 *unit(s)*

Transnationalism and Global Relations

- CCS 105 - Chicanos: United States/Mexico Relations 3 *unit(s)*
- CCS 120 - Political Economy and Chicana/o Communities 3 *unit(s)*
- CCS 175 - Human Migrations: Global Reach 3 *unit(s)*

University Electives (30 units)

Students may choose 9 3-unit university or Chicana and Chicano Studies electives. Students are encouraged to enroll in a minor or second major.

Total Units Required (120 units)

Communication Studies, BA

The Bachelor of Arts in Communication Studies is designed to equip students in Silicon Valley with a vast knowledge of communication rooted in theoretical frameworks, research methods, and practical application.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	47
Major Requirements	42
University Electives	31
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

COMM 101C is a prerequisite for COMM 198 and COMM 199C.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Major Requirements (42 units)

For the BA in Communication Studies only 6 units of CR/NC coursework will be accepted. COMM 198, a required course, counts as 2 units of CR/NC coursework.

Core Courses (10 units)

- COMM 101C - Junior Seminar: Theorizing Communication 4 *unit(s)*
- COMM 198 - Applied Activity in Communication 1-2 *unit(s)*
- COMM 199C - Senior Seminar: Synthesis & Application 4 *unit(s)*

Major Courses (32 units)

Foundations Courses (8 units)

Complete eight units from:

- COMM 110F - Interpersonal Communication 4 *unit(s)*
- COMM 117F - Understanding Play & Games 4 *unit(s)*
- COMM 122F - Performance Studies 4 *unit(s)*
- COMM 126F - Race and Performance 4 *unit(s)*
- COMM 130F - Activism, Action, and Resistance 4 *unit(s)*
- COMM 132F - Dis/Ability Communication 4 *unit(s)*
- COMM 133F - Ethical Problems in Communication 4 *unit(s)*
- COMM 144F - Organizational Communication 4 *unit(s)*
- COMM 146F - Communication and the Environment 4 *unit(s)*
- COMM 149F - Rhetoric and Public Life 4 *unit(s)*
- COMM 160F - Language, Meaning, and Culture 4 *unit(s)*
- COMM 161F - Communication and Culture 4 *unit(s)*
- COMM 164F - Communication and Global Organizations 4 *unit(s)*
- COMM 170F - Persuasion 4 *unit(s)*
- COMM 172F - Multicultural Communication in the United States 4 *unit(s)*
- COMM 173F - Intercultural Communication and Global Understanding 4 *unit(s)*
- COMM 175F - Nonverbal Communication 4 *unit(s)*
- COMM 178F - Critical Intercultural Communication Studies 4 *unit(s)*
- COMM 181F - New Media/New World 4 *unit(s)*
- COMM 185F - Health Communication 4 *unit(s)*

Inquiry Courses (8 units)

Complete eight units from:

- COMM 119I - Researching Games 4 *unit(s)*
- COMM 123I - Performance of Ethnodrama 4 *unit(s)*
- COMM 145I - Rhetorical and Cultural Criticism 4 *unit(s)*
- COMM 150I - Inquiry in Organizational Communication 4 *unit(s)*
- COMM 151I - New Media/New Methods 4 *unit(s)*
- COMM 152I - Communication in World Cultures 4 *unit(s)*
- COMM 153I - Discourse Analysis 4 *unit(s)*
- COMM 154I - Ethnography for Communication Studies 4 *unit(s)*
- COMM 155I - Quantitative Communication Inquiry 4 *unit(s)*
- COMM 156I - Observation and Interviewing Methods 4 *unit(s)*
- COMM 169I - The Media: Response and Criticism 4 *unit(s)*
- COMM 186I - Research Methods in Health Communication 4 *unit(s)*

Practice Courses (8 units)

Complete eight units from:

- COMM 105P - Communication, Self, and Society 4 unit(s)
- COMM 111P - Interviewing 4 unit(s)
- COMM 113P - Games in Everyday Life 4 unit(s)
- COMM 114P - Business and Professional Speaking 4 unit(s)
- COMM 115P - Communication and Conflict 4 unit(s)
- COMM 116P - Mediation: Theory and Practice 4 unit(s)
- COMM 120P - Persuasive & Presentation Skills 4 unit(s)
- COMM 121P - Performance as Practice 4 unit(s)
- COMM 124P - Communication Training and Development 4 unit(s)
- COMM 125P - Ensemble Performance 4 unit(s)
- COMM 131P - New Media/You Media 4 unit(s)
- COMM 140P - Argumentation and Debate 4 unit(s)
- COMM 141P - Small Group Communication 4 unit(s)
- COMM 147P - Argumentation and Persuasion in Courts of Law 4 unit(s)
- COMM 165P - Communication and Organizational Philanthropy 4 unit(s)
- COMM 176P - Communication and Gender 4 unit(s)
- COMM 182P - Communication in the Classroom 4 unit(s) (*strongly recommended for students who plan to pursue a teaching credential*)
- COMM 187P - Communication and Community Wellness 4 unit(s)

Additional Major Courses (8 units)

Complete eight units of Foundations (F), Inquiry (I), or Practice (P) courses or lower division COMM courses.

8 additional units in Communication Studies may be lower division Core GE Courses and may be completed at SJSU or another college.

- COMM 10 - Communication and Human Relationships 3 unit(s) (D)
- COMM 20 - Public Speaking 3 unit(s) (A1)
- COMM 20EL - Public Speaking for English Language Learners 3 unit(s) (A1)
- COMM 21 - Performing Culture and Society 3 unit(s) (D)
- COMM 40 - Argumentation and Advocacy 3 unit(s) (A1)
- COMM 41 - Critical Decision Making 3 unit(s) (A3)
- COMM 45 - Media and Culture 3 unit(s) (A3)
- COMM 74 - Fundamentals of Intercultural Communication 3 unit(s) (E)
- COMM 74Q - Fundamentals of Intercultural Communication 3 unit(s) (E)
Up to 6 units of SJSU Studies COMM Courses may count toward the major. Must take both COMM 168A and COMM 168B to satisfy the SJSU Studies requirement.
- COMM 100W - Writing Workshop: Writing for Influence 3 unit(s) (WID)
- COMM 157SL - Community Action/Community Service 3 unit(s) (S)
- COMM 168A - Climate Action and Leadership I 6 unit(s)
- COMM 168B - Climate Action and Leadership II 3 unit(s) (R+S+V)
- COMM 174 - Intercultural Comm and Structural Inequalities 3 unit(s) (S)
- COMM 179 - Global Media and Resistance 3 unit(s) (V)

Up to 4 units of variable unit courses may count toward the major. No more than 1 unit of COMM 80 and COMM 91J may count toward the major. No more than 3 units of Individual Studies, Directed Reading, or Forensics may count toward the major.

- COMM 80 - Communication Workshop 1 unit(s)

- COMM 91J - Judge Training 1 unit(s)
- COMM 180 - Individual Studies 1-3 unit(s)
- COMM 184 - Directed Reading 1-2 unit(s)
- COMM 191A - Activity Projects in Forensics 1-3 unit(s)
- COMM 191B - Activity Projects in Forensics 1-3 unit(s)
- COMM 191C - Activity Projects in Forensics 1-3 unit(s)
- COMM 191J - Activity Projects in Forensics 1 unit(s)
- COMM 191M - Activity Projects in Forensics 1 unit(s)
- COMM 193 - Activity Projects in Intercultural/International Communication 1-3 unit(s)
- COMM 195 - Special Topics in Communication Studies 1-3 unit(s)

University Electives (31 units)

A minor is encouraged but not required.

Total Units Required (120 units)

Communication Studies, Preparation for Teaching, BA (Not Accepting Students)

This major is designed for students interested in teaching English or speech communication in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Communication Studies.

A minimum grade point average (GPA) and completion of the program will not guarantee admission to the credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See "Teaching: How to Become a Teacher in California" (see Teaching) for information on application and admission to credential programs.

Summary of Degree Units

University Graduation Requirements	50
Major Preparation	22-24
Major Core Requirements	14
Preparation for Teaching	24
University Electives	8-10
Total	120

University Requirements for Graduation

Students must complete all residency, curriculum, unit, and GPA requirements as outlined in the Undergraduate University Graduation Requirements section of the Policies and Procedures.

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

General Education/American Institution Requirements

Courses that meet General Education/American Institution requirements are noted with area designation for required area. For legend please see General Education Attributes.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

Major Preparation (22-24 units)

- ENGL 105 - Seminar in Advanced Composition 4 *unit(s)*
- ENGL 112B - Literature for Young Adults 4 *unit(s)*
- ENGL 125 - Ancient Literatures 4 *unit(s)*

Complete One Course From:

- ENGL 103 - Modern English 4 *unit(s)*
- LING 107 - Patterns of English 3 *unit(s)*

Complete One Course From:

- ENGL 144 - Shakespeare I 4 *unit(s)*
- ENGL 145 - Shakespeare and Performance 4 *unit(s)*

Complete One Course From:

- ENGL 162 - Indigenous American Literatures 4 unit(s)
- ENGL 163 - Asian American Literatures 4 unit(s)
- ENGL 168 - The American Novel 4 unit(s)
- ENGL 169 - Ethnicity in American Literature 3 unit(s) (S)

Major Requirements (38 units)

Core Courses (14 units)

- COMM 101C - Junior Seminar: Theorizing Communication 4 unit(s)
- COMM 182P - Communication in the Classroom 4 unit(s)
- COMM 198 - Applied Activity in Communication 1-2 unit(s)
- COMM 199C - Senior Seminar: Synthesis & Application 4 unit(s)

Additional Requirements (24 units)

- Two courses in Foundations Area 8 unit(s)
- Two Courses in Inquiry Area 8 unit(s)
- Two Courses in Practice Area 8 unit(s) (One Course in Practice Area AND COMM 157SL (3 units) will meet Practice Area requirement)

University Electives (8-10 units)

Total Units Required (120 units)

Economics, BA

The Department of Economics has one core mission: to train both graduate and undergraduate students in the economic way of thinking and market process. Our internationally recognized faculty will guide your exploration of economic theory, equipping you with the analytical decision-making skills to prepare you to succeed in careers in business, public policy, government service, data management, as well as providing a solid foundation for future doctoral studies in economics.

Economics is a general program, flexible enough to allow for a variety of student objectives. The Economics BA has 17 units of open electives. These elective units give students the flexibility to supplement the thinking skills developed in economics with technical skills developed in such fields as finance, marketing, and public relations. A bachelor degree in economics serves as an excellent springboard to an MBA or law degree.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	47
Major Preparation	6

Major Core Requirements	26
Upper Division Economics Electives	24
University Electives	17
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

Courses required in the major (Preparation, Core, Capstone, and major electives) must be completed with a minimum grade of "C-" with the exception of MATH 71/71X.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (6 units)

The statistics course in Major Preparation must be completed with a grade of "C-" or better:

- Any Statistics course 3 *unit(s)* (including SOCI 15 (B4), SOCS 15 (B4), STAT 95 (B4), BUS2 90)
- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (B4)
MATH 71X may be used instead of MATH 71. MATH 30 or 30X also accepted.

Major Requirements (50 units)

All courses required in the major (Core, Capstone, and major electives) must be completed with a minimum grade of "C-".

Core Courses (26 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ECON 100W - Writing Workshop: Economic Reports 4 *unit(s)* (WID)
- ECON 101 - Microeconomic Analysis 4 *unit(s)*
- ECON 102 - Macroeconomic Analysis 4 *unit(s)*
- ECON 103A - Introduction to Econometrics and Research Methods 4 *unit(s)*

Capstone Experience (4 units):

Complete one course:

- ECON 190 - History of Economic Thought 4 *unit(s)*
- ECON 191 - Economic Thought of Nobel Prize Winners 4 *unit(s)*

Upper Division Economics Electives (24 units)

Select any 100-level courses within the Department of Economics with the exception of ECON 109, which is NOT intended for majors.

University Electives (17 units)

A minor in a field recommended by the advisor is encouraged.

Total Units Required (120 units)

Economics, BA (SJSU Online)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

The Department of Economics has one core mission: to train both graduate and undergraduate students in the economic way of thinking and market process. Our internationally recognized faculty will guide your exploration of economic theory, equipping you with the analytical decision-making skills to prepare you to succeed in careers in business, public policy, government service, data management, as well as providing a solid foundation for future doctoral studies in economics.

Economics is a general program, flexible enough to allow for a variety of student objectives. The Economics BA has 7 units of open electives. These elective units give students the flexibility to supplement the thinking skills developed in economics with technical skills developed in such fields as finance, marketing, and public relations. A bachelor degree in economics serves as an excellent springboard to an MBA or law degree.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Graduation Requirements	9
Major Requirements	44
University Electives	7
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units).
- All four CSU-approved Basics Skills courses must be completed with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
- GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.
- Completion of at least 12 units of the following courses (or equivalents):
- ECON 1A - Principles of Economics: Macroeconomics 3 unit(s) (with a grade of "C-" or better)

- ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D) (with a grade of "C-" or better)
- Any Statistics course 3 unit(s) (B4) (with a grade of "C-" or better)
- MATH 71 - Calculus for Business and Aviation 3 unit(s) (B4)
MATH 71X - Calculus for Business and Aviation may be used instead of MATH 71. MATH 30 or 30X also accepted.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (44 units)

All courses required in the major (Core, Capstone, and major electives) must be completed with a minimum grade of "C-".

Core Courses (16 units)

- ECON 100W - Writing Workshop: Economic Reports 4 *unit(s)* (WID+R)
- ECON 101 - Microeconomic Analysis 4 *unit(s)*
- ECON 102 - Macroeconomic Analysis 4 *unit(s)*
- ECON 103A - Introduction to Econometrics and Research Methods 4 *unit(s)*

Capstone Experience (4 Units)

Complete one course:

- ECON 190 - History of Economic Thought 4 *unit(s)*
- ECON 191 - Economic Thought of Nobel Prize Winners 4 *unit(s)*

Upper Division Economics Electives (24 units)

Select six 100-level courses with the Department of Economics with the exception of ECON 109, which is not intended for majors.

University Electives (7 units)

Total Units Required (120 units)

Economics, BS

The Department of Economics has one core mission: to train both graduate and undergraduate students in the economic way of thinking and market process. Our internationally recognized faculty will guide your exploration of economic theory, equipping you with the analytical decision-making skills to prepare you to succeed in careers in business, public policy, government service, data management, as well as providing a solid foundation for future doctoral studies in economics.

The Economics BS is designed for those seeking a more quantitative study of economics.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	47
Major Preparation	6
Major Core Requirements	30
Upper Division Economics Electives	20
University Electives	17
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses required in the major (Core and major electives) must be completed with a minimum grade of "C-". The following courses in Preparation for the Major must be completed with a "C" or better: MATH 30 (or MATH 30X) and a Statistics course.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Major Preparation (6 units)

The following courses in Preparation for the Major must be completed with a grade of "C" or better.

- Any Statistics course 3 *unit(s)* (including SOCI 15 (B4), SOCS 15 (B4), STAT 95 (B4), BUS2 90)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
MATH 30X may be used instead of MATH 30. MATH 30P or 30PL also accepted.

Major Requirements (50 units)

All courses required in the major (Core and major electives) must be completed with a minimum grade of "C-".

Core Courses (30 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ECON 100W - Writing Workshop: Economic Reports 4 *unit(s)* (WID)
- ECON 101 - Microeconomic Analysis 4 *unit(s)*
- ECON 102 - Macroeconomic Analysis 4 *unit(s)*
- ECON 103A - Introduction to Econometrics and Research Methods 4 *unit(s)*
- ECON 103B - Econometric Methods 4 *unit(s)*
- ECON 104 - Mathematical Methods for Economics 4 *unit(s)*

Upper Division Economics Electives (20 units)

Select any 100-level courses within the Department of Economics with the exception of ECON 109, which is NOT intended for majors.

University Electives (17 units)

A minor in a field recommended by the advisor is encouraged.

Total Units Required (120 units)

Environmental Studies, BA

The BA degree, offered by the Department of Environmental Studies, is designed to prepare students for career opportunities in coastal resource management, environmental communications, environmental regulation and policy, integrated and solid waste management, human ecology and environmental planning.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	29
Major Preparation	12
Major Core Requirements	28
Major Electives	21
Advisor Approved Minor	18
University Electives	12
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (12 units)

- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- ENVS 10 - Life on a Changing Planet 3 *unit(s)* (B2)
- MATH 18A - College Algebra 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

Major Requirements (79 units)

Core Courses (28 units)

- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- ENVS 100W - Environmental Research and Writing 3 *unit(s)* (WID)
- ENVS 107 - Introduction to Environmental Economics and Policy 4 *unit(s)*
- ENVS 110 - Resource Analysis 4 *unit(s)*
- ENVS 117 - Human Ecology 3 *unit(s)*
- ENVS 124 - Introduction to Environmental Law 3 *unit(s)*
- ENVS 185 - Environmental Impact Analysis 4 *unit(s)*
- ENVS 198 - Senior Seminar 4 *unit(s)*

Major Electives (21 units)

Field Courses (8 units)

Complete two courses:

- ENVS 144 - California Wetland Controversies 4 unit(s)
- ENVS 148 - Sustainable Materials Management 4 unit(s)
- ENVS 154 - Sustainable Agriculture 4 unit(s)
- ENVS 161 - California Wildlands 4 unit(s)
- ENVS 166 - Nature and Conservation Photography 4 unit(s)
- ENVS 173 - Forest Ecology and Conservation 4 unit(s)
- ENVS 187 - Environmental Restoration 4 unit(s)
- ENVS 189 - Coastal Field Studies 4 unit(s)
- ENVS 190 - Advanced Environmental Impact Assessment 4 unit(s)
- ENVS 191 - Advanced Environmental Restoration 4 unit(s)
- ENVS 270 - Field Studies in Water Resource Management 4 unit(s)

Complete One SJSU Studies Sequence (9 units)

Sequence One (9 units)

- ENVS 168A - Climate Action and Leadership I 6 unit(s)
- ENVS 168B - Climate Action and Leadership II 3 unit(s) (R+S+V)

Sequence Two (9 units)

- ENVS 150 - Introduction to Environmental Thought 3 unit(s) (S)
- ENVS 159 - Nature and World Cultures 3 unit(s) (V)

Complete One 'R' Course From:

- ENVS 111 - Geology and the Environment 3 unit(s) (R)
- ENVS 113 - Atmospheric Pollution 3 unit(s) (R)
- ENVS 119 - Energy and the Environment 3 unit(s) (R)
- ENVS 152 - Globalization and the Environment 3 unit(s) (R)

Advisor Approved Electives (4 units)

Additional units of advisor approved electives.

Recommended that students take 1-4 units of ENVS 194 - Environmental Internship.

Advisor Approved Minor (18 units)

If the minor is fewer than 18 units, students must complete additional advisor approved electives.

University Electives (12 units)

Total Units Required (120 units)

Environmental Studies, BS

The BS degree, offered by the Department of Environmental Studies, is designed to prepare students for career opportunities in energy or water resources management, biological resource protection, aquatic environments, sustainable agriculture, energy resources, environmental health and safety, environmental impact assessment, environmental restoration, and wilderness open space resource management.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	29
Major Preparation	24
Major Core Requirements	28
Major Electives	21
Advisor Approved Minor	18
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (24 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- ENVS 10 - Life on a Changing Planet 3 *unit(s)* (B2)
- MATH 19 - Precalculus 5 *unit(s)* (B4)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

Major Requirements (67 units)

Core Courses (28 units)

- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- ENVS 100W - Environmental Research and Writing 3 *unit(s)* (WID)
- ENVS 107 - Introduction to Environmental Economics and Policy 4 *unit(s)*
- ENVS 110 - Resource Analysis 4 *unit(s)*
- ENVS 117 - Human Ecology 3 *unit(s)*
- ENVS 124 - Introduction to Environmental Law 3 *unit(s)*
- ENVS 185 - Environmental Impact Analysis 4 *unit(s)*
- ENVS 198 - Senior Seminar 4 *unit(s)*

Major Electives (21 units)

Field Courses (8 units)

Complete two courses:

- ENVS 144 - California Wetland Controversies 4 *unit(s)*
- ENVS 148 - Sustainable Materials Management 4 *unit(s)*
- ENVS 154 - Sustainable Agriculture 4 *unit(s)*
- ENVS 161 - California Wildlands 4 *unit(s)*
- ENVS 166 - Nature and Conservation Photography 4 *unit(s)*
- ENVS 173 - Forest Ecology and Conservation 4 *unit(s)*
- ENVS 187 - Environmental Restoration 4 *unit(s)*
- ENVS 189 - Coastal Field Studies 4 *unit(s)*
- ENVS 190 - Advanced Environmental Impact Assessment 4 *unit(s)*
- ENVS 191 - Advanced Environmental Restoration 4 *unit(s)*
- ENVS 270 - Field Studies in Water Resource Management 4 *unit(s)*

Choose one SJSU Studies Sequence (9 units)

Sequence One (9 units)

- ENVS 168A - Climate Action and Leadership I 6 *unit(s)*
- ENVS 168B - Climate Action and Leadership II 3 *unit(s)* (R+S+V)

Sequence Two (9 units)

- ENVS 150 - Introduction to Environmental Thought 3 *unit(s)* (S)
- ENVS 159 - Nature and World Cultures 3 *unit(s)* (V)

Complete One 'R' Course From:

- ENVS 111 - Geology and the Environment 3 *unit(s)* (R)
- ENVS 113 - Atmospheric Pollution 3 *unit(s)* (R)
- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- ENVS 152 - Globalization and the Environment 3 *unit(s)* (R)

Advisor Approved Electives (4 units)

Additional units of advisor approved electives.

Recommended that students take 1-3 units of ENVS 194 - Environmental Internship .

Advisor Approved Minor (18 units)

If the minor is fewer than 18 units, students must complete additional advisor approved electives.

Total Units Required (120 units)

Environmental Studies, Preparation for Teaching, BA

The Environmental Studies, Preparation for Teaching, BA , offered by the Department of Environmental Studies, is designed for students interested in teaching in elementary or middle school. The course work satisfies University requirements for a BA in Environmental Studies and is a program approved by the Teacher Credentialing in the State of California (CTC) for waiver of the Commission-approved subject matter examination (CSET for Multiple Subjects). Thus, students completing this program are eligible to apply for the Multiple Subject Teaching Credential (K-8) program.

Students completing this program must also meet all other credential program standards. See "Teaching: How to Become a Teacher in California" (see Teaching) for information on application and admission to credential programs.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	11
Major Core Requirements	25
Multiple Subjects Preparation Core	73-79

Internship	3-9
University Electives	0-8
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (9 units)

Of the 39 units required by the university, 30 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions

The 6 units of American Institutions (US123) requirement may be satisfied in the major (if identified below) or by transfer from a community college or university. Other courses meet the American Institutions requirement, but may not include additional GE areas.

Consult major advisor for department recommended coursework to meet GE requirement.

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (101-113 units)

Core Courses (25 units)

- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- ENVS 100W - Environmental Research and Writing 3 *unit(s)* (WID)
- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- ENVS 129 - Water Policy in the Western U.S. 3 *unit(s)*
- ENVS 150 - Introduction to Environmental Thought 3 *unit(s)* (S)
- ENVS 151 - Race, Class and the Environment 3 *unit(s)* or AFAM 151 - Race, Class and the Environment 3 *unit(s)* (Both Area R)
- ENVS 154 - Sustainable Agriculture 4 *unit(s)*
- ENVS 158 - Environmental Education 3 *unit(s)*

Multiple Subjects Preparation Core Curriculum Requirements (73-79 units)

Reading, Language and Literature (22-25 units)

- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- ENGL 2 - Critical Thinking and Writing 3 *unit(s)* (A3) (ENGL 1B also accepted for Transfer Students.)
- ENGL 10 - Great Works of Literature 3 *unit(s)* (C2)
- ENGL 103 - Modern English 4 *unit(s)*
- ENGL 112A - Children's Literature 3 *unit(s)*

Complete one sequence:

Sequence One

- COMM 45 - Media and Culture 3 *unit(s)* (A3)
- LING 108 - Introduction to Second Language Development, Teaching, and Assessment 3 *unit(s)*
- EDEL 108E - Teaching Reading in Linguistically and Culturally Diverse Classrooms 3 *unit(s)*

Sequence Two

- CHAD 150 - Development of Language and Communicative Competence 3 *unit(s)*
- CHAD 151 - Developing Literacy in a Diverse Society 3 *unit(s)*

History and Social Science (15 units)

- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)* (S)
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)

Complete one sequence:

African American Studies

Must complete both AFAM 2A and AFAM 2B to meet requirement.

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American History

Must complete both AAS 33A and AAS 33B to meet requirement.

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies

Must complete both CCS 10A and CCS 10B to meet requirement.

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History

Must complete both HIST 15 and POLS 15 to meet requirement.

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

Mathematics (9 units)

- MATH 12 - Number Systems 3 *unit(s)* (B4)
- MATH 105 - Concepts in Mathematics, Probability, Statistics 3 *unit(s)*
- MATH 106 - Intuitive Geometry 3 *unit(s)*

Science (12 units)

ENVS 158 - Environmental Education is also a required Science course, but it is completed as part of the Core Courses.

- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1/B3)
- ENVS 10 - Life on a Changing Planet 3 *unit(s)* (B2)
- GEOL 103 - Earth Systems and the Environment 3 *unit(s)* (R)
- PHYS 1 - Elementary Physics 3 *unit(s)* (B1)

Visual and Performing Arts (9 units)

- CA 177 - Interdisciplinary Arts for Teaching 3 *unit(s)*

Complete two courses (6 units):

- ART 39 - Multicultural Arts for Children 3 *unit(s)*
- ART 138 - Elementary Art Methods 3 *unit(s)*
- DANC 148 - Children's Dance 3 *unit(s)*
- MUSC 10B - Introduction to Music 3 *unit(s)* (C1)
- MUSC 185A - Music for Children 3 *unit(s)*
- TA 131 - Storytelling 3 *unit(s)*

Physical Education and Health (3 units)

- CHAD 149 - Child Health and Activity 3 *unit(s)*

Human Development (3 units)

Complete one course:

- CHAD 60 - Child Development 3 *unit(s)* (E)
- CHAD 70 - Lifespan Development in a Global Context 3 *unit(s)* (E)

Internship (3-9 units)

- ENVS 194 - Environmental Internship 1-9 *unit(s)*

Advisor Approved Electives (0-8 units)

Total Units Required (120 units)

Forensic Science, Biology Concentration, BS

The Department of Justice Studies' Forensic Science program at SJSU offers Bachelor of Science (BS) degrees in Forensic Chemistry, Forensic Biology, Crime Scene Investigation, and Digital Evidence for students with a career interest in crime lab work. Students in the forensic science major take basic and advanced biology, chemistry, and physics courses to build a strong foundation in the sciences, and complement these with coursework in forensic science applications. The curricula of each major concentration meet the American Academy of Forensic Sciences Forensic Education Program Accreditation standards.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	30
Major Preparation	49
Major Requirements	41
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses required in the major, including all electives, must be completed with a grade of C or better. This includes all courses in the following sections: Major Preparation and the Major Requirements.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Exceptions for University Graduation Requirements apply to this major.

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements (except for 1 course in GE Area C and 1 course in GE Area D) and should follow the 60 unit guarantee roadmap (which include the missing GE in Area C and D). Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 unit may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education

The Physical Education Requirement is waived for this major. See the Exceptions for University Graduation Requirements.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (49 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 55 - Quantitative Analysis 2 *unit(s)*
- CHEM 55L - Quantitative Analysis Laboratory 2 *unit(s)*
- CHEM 112A - Organic Chemistry 3 *unit(s)*

- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- JS 171 - Human Rights and Justice 3 *unit(s)* (V)
- MATH 30 - Calculus I 3 *unit(s)* (B4) MATH 30X may be used instead of MATH 30.
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Statistics Course

Complete one course: (UNVS/MATH 15 may be used in lieu of the statistics course required by this major.)

- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

Major Requirements (41 units)

Core Courses (18 units)

- FS 100W - Forensic Science Writing Workshop 3 *unit(s)* (WID) OR JS 100W - Writing Workshop 3 *unit(s)* (WID)
- FS 11 - Survey of Forensic Science 3 *unit(s)*
- FS 161 - Crime Scene Investigation 3 *unit(s)*
- FS 162 - Forensic Science Applications 3 *unit(s)*

Practical Requirement

Complete 3 units:

- JS 180 - Individual Studies 1-3 *unit(s)*
- JS 181 - Internship: Justice Studies 1-6 *unit(s)* (3 *units* required)
- JS 182 - Themis: Journal of Justice Studies and Forensic Science 3 *unit(s)*
- JS 184 - Directed Reading 1-3 *unit(s)*

Senior Capstone

Complete one course:

- FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues 3 *unit(s)*
- JS 189 - Senior Seminar: Contemporary Problems 3 *unit(s)*

Concentration Courses (23 units)

- BIOL 31 - Principles of Biology II 4 *unit(s)* (B2+B3)
- BIOL 115 - General Genetics 4 *unit(s)*
- FS 57 - Biological Criminalistics 3 *unit(s)*
- FS 167 - Forensic Molecular Biology 4 *unit(s)*
- FS 177 - Forensic Genotyping Technologies 4 *unit(s)*

Biochemistry Course

Complete one course:

- CHEM 130A - Biochemistry 4 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*

Total Units Required (120 units)

Forensic Science, Chemistry Concentration, BS

The Department of Justice Studies' Forensic Science program at SJSU offers Bachelor of Science (BS) degrees in Forensic Chemistry, Forensic Biology, Crime Scene Investigation, and Digital Evidence for students with a career interest in crime lab work. Students in the forensic science major take basic and advanced biology, chemistry, and physics courses to build a strong foundation in the sciences, and complement these with coursework in forensic science applications. The curricula of each major concentration meet the American Academy of Forensic Sciences Forensic Education Program Accreditation standards.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	32
Major Preparation	41
Major Requirements	47
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses required in the major, including all electives, must be completed with a grade of C or better. This includes all courses in the following sections: Major Preparation and the Major Requirements.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements (except for 1 course in GE Area C and 1 course in GE Area D) and should follow the 60 unit guarantee roadmap (which include the missing GE in Area C and D). Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (41 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2+B3)
- CHEM 1A - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 1B - General Chemistry 5 *unit(s)* (B1+B3)
- CHEM 55 - Quantitative Analysis 2 *unit(s)*
- CHEM 55L - Quantitative Analysis Laboratory 2 *unit(s)*
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- JS 171 - Human Rights and Justice 3 *unit(s)*
- MATH 30 - Calculus I 3 *unit(s)* (B4)
MATH 30X may be used instead of MATH 30.
- PHIL 186 - Professional and Business Ethics 3 *unit(s)*
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)

Statistics Course

Complete one course: (UNVS/MATH 15 may be used in lieu of the statistics course required by this major.)

- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

Major Requirements (47 units)

Core Courses (18 units)

- FS 100W - Forensic Science Writing Workshop 3 *unit(s)* (WID) OR JS 100W - Writing Workshop 3 *unit(s)* (WID)
- FS 11 - Survey of Forensic Science 3 *unit(s)*

- FS 161 - Crime Scene Investigation 3 *unit(s)*
- FS 162 - Forensic Science Applications 3 *unit(s)*

Practical Requirement

Complete 3 units:

- JS 180 - Individual Studies 1-3 *unit(s)*
- JS 181 - Internship: Justice Studies 1-6 *unit(s)* (3 units required)
- JS 182 - Themis: Journal of Justice Studies and Forensic Science 3 *unit(s)*
- JS 184 - Directed Reading 1-3 *unit(s)*

Senior Capstone

Complete one course:

- FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues 3 *unit(s)*
- JS 189 - Senior Seminar: Contemporary Problems 3 *unit(s)*

Concentration Courses (29 units)

- CHEM 112A - Organic Chemistry 3 *unit(s)*
- CHEM 112B - Organic Chemistry 3 *unit(s)*
- CHEM 113A - Organic Chemistry Lab 2 *unit(s)*
- CHEM 145 - Inorganic Chemistry 3 *unit(s)*
- CHEM 155 - Instrumental Analysis 4 *unit(s)*
- CHEM 160 - Physical Chemistry 4 *unit(s)*
- FS 166 - Forensic Chemistry 3 *unit(s)*
- FS 176 - Introduction to Fire and Explosion Investigations 3 *unit(s)*

Biochemistry Course

Complete one course:

- CHEM 130A - Biochemistry 4 *unit(s)*
- CHEM 135 - General Biochemistry 4 *unit(s)*

Total Units Required (120 units)

Forensic Science, Crime Scene Investigation Concentration, BS

The Department of Justice Studies' Forensic Science program at SJSU offers Bachelor of Science (BS) degrees in Forensic Chemistry, Forensic Biology, Digital Evidence, and Crime Scene Investigation (CSI) for students with a career interest in crime lab work. Students in the forensic science major take basic and advanced biology, chemistry, and physics courses to build a strong foundation in the sciences, and complement these with coursework in forensic science applications. The curricula of each major concentration meet the American Academy of Forensic Sciences Forensic Education Program Accreditation standards. The CSI Concentration focuses on a study of the methods and techniques of scientific crime scene investigation, such as documentation and collection of physical evidence, crime scene reconstruction, fingerprint development and firearms and toolmarks analyses.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	32
Major Preparation	33
Major Requirements	51
University Electives	4
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses required in the major, including all electives, must be completed with a grade of C or better. This includes all courses in the following sections: Major Preparation and the Major Requirements.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (33 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2 +B3)
- CHEM 30A - Introductory Chemistry 3 *unit(s)* (B1+B3)
- CHEM 30B - Introductory Chemistry 3 *unit(s)* (B1+B3)
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- MATH 30 - Calculus I 3 *unit(s)* (B4) *MATH 30X may be used instead of MATH 30.*
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1+B3)
- JS 171 - Human Rights and Justice 3 *unit(s)* (V)

Statistics Course

Complete one course: (UNVS/MATH 15 may be used in lieu of the statistics course required by this major.)

- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

Major Requirements (51 units)

Core Courses (18 units)

- FS 100W - Forensic Science Writing Workshop 3 *unit(s)* (WID) OR JS 100W - Writing Workshop 3 *unit(s)* (WID)
- FS 11 - Survey of Forensic Science 3 *unit(s)*
- FS 161 - Crime Scene Investigation 3 *unit(s)*
- FS 162 - Forensic Science Applications 3 *unit(s)*

Practical Requirement

Complete 3 units:

- JS 180 - Individual Studies 1-3 *unit(s)*
- JS 181 - Internship: Justice Studies 1-6 *unit(s)*
- JS 182 - Themis: Journal of Justice Studies and Forensic Science 3 *unit(s)*
- JS 184 - Directed Reading 1-3 *unit(s)*

Senior Seminar

Complete one course:

- FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues 3 *unit(s)*
- JS 189 - Senior Seminar: Contemporary Problems 3 *unit(s)*

Concentration Courses (33 units)

- FS 12 - Introduction to Digital Evidence Investigations 3 *unit(s)*
- FS 57 - Biological Criminalistics 3 *unit(s)*

- FS 101 - Expert Witness Testimony 3 *unit(s)*
- FS 106 - Forensic Entomology 3 *unit(s)*
- FS 163 - Fingerprint Science 3 *unit(s)*
- FS 164 - Crime Scene and Evidence Photography 3 *unit(s)*
- FS 173 - Death Scene Investigation 3 *unit(s)*
- PHOT 40 - Beginning Photography 3 *unit(s)*

Major Electives

Complete 3 courses:

- FS 130 - Digital Forensic Analysis 3 *unit(s)*
- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- FS 166 - Forensic Chemistry 3 *unit(s)*
- FS 170 - Forensic Science in Human Rights Investigations 3 *unit(s)*
- FS 171 - Forensic Criminology 3 *unit(s)*
- FS 175 - Firearm and Toolmark Evidence Analysis 3 *unit(s)*
- FS 176 - Introduction to Fire and Explosion Investigations 3 *unit(s)*

University Electives (4 units)

Total Units Required (120 units)

Forensic Science, Digital Evidence Concentration, BS

The Department of Justice Studies' Forensic Science program at SJSU offers Bachelor of Science (BS) degrees in Forensic Chemistry, Forensic Biology, Crime Scene Investigation, and Digital Evidence for students with a career interest in crime lab work. Students in the forensic science major take basic and advanced biology, chemistry, and physics courses to build a strong foundation in the sciences, and complement these with coursework in forensic science applications. The curricula of each major concentration meet the American Academy of Forensic Sciences Forensic Education Program Accreditation standards.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	32
Major Preparation	44
Major Requirements	36
University Electives	8
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Major-Specific Graduation Requirements

All courses required in the major, including all electives, must be completed with a grade of C or better. This includes all courses in the following sections: Major Preparation and the Major Requirements.

Prerequisite Requirements

Enrollment in any chemistry course requires that the prerequisite courses be passed with a grade of "C or better" (C- not accepted). Exceptions may be made only with instructor consent or if not explicitly stated in the course description. Refer to the SJSU Course Catalog for specific information regarding course prerequisites.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (21 units)

Of the 39 units required by the university, 18 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements (except for 1 course in GE Area C and 1 course in GE Area D) and should follow the 60 unit guarantee roadmap (which include the missing GE in Area C and D). Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (44 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2 +B3)
- CS 46A - Introduction to Programming 4 *unit(s)*
- CS 46B - Introduction to Data Structures 4 *unit(s)*
- CS 47 - Introduction to Computer Systems 3 *unit(s)*
- ENGL 1A - First Year Writing 3 *unit(s)* (A2)
- JS 171 - Human Rights and Justice 3 *unit(s)* (V)
- MATH 30 - Calculus I 3 *unit(s)* (B4)
MATH 30X may be used instead of MATH 30.

- MATH 42 - Discrete Mathematics 3 *unit(s)*
MATH 42X may be used instead of MATH 42.
- PHIL 186 - Professional and Business Ethics 3 *unit(s)* (S)
- PHYS 2A - Fundamentals of Physics 4 *unit(s)* (B1B3)
- PHYS 2B - Fundamentals of Physics 4 *unit(s)* (B1B3)

Statistics Course

Complete one course: (UNVS/MATH 15 may be used in lieu of the statistics course required by this major.)

- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)

Programming Course

Complete one course:

- CS 22A - Python for Everyone 3 *unit(s)* (B4)
- CS 49C - Programming in C 3 *unit(s)*

Major Requirements (36 units)

Core Courses (18 units)

- FS 100W - Forensic Science Writing Workshop 3 *unit(s)* (WID) **OR** JS 100W - Writing Workshop 3 *unit(s)* (WID)
- FS 11 - Survey of Forensic Science 3 *unit(s)*
- FS 161 - Crime Scene Investigation 3 *unit(s)*
- FS 162 - Forensic Science Applications 3 *unit(s)*

Practical Requirement

Complete 3 units:

- JS 180 - Individual Studies 1-3 *unit(s)*
- JS 181 - Internship: Justice Studies 1-6 *unit(s)*
- JS 182 - Themis: Journal of Justice Studies and Forensic Science 3 *unit(s)*
- JS 184 - Directed Reading 1-3 *unit(s)*

Senior Seminar

Complete one course:

- FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues 3 *unit(s)*
- JS 189 - Senior Seminar: Contemporary Problems 3 *unit(s)*

Concentration Courses (18 units)

- CS 146 - Data Structures and Algorithms 3 *unit(s)*

- CS 147 - Computer Architecture 3 *unit(s)*
- FS 12 - Introduction to Digital Evidence Investigations 3 *unit(s)*
- FS 101 - Expert Witness Testimony 3 *unit(s)*
- FS 130 - Digital Forensic Analysis 3 *unit(s)*
- FS 131 - Digital Forensic Applications 3 *unit(s)*

University Electives (8 units)

Total Units Required (120 units)

Geographic Information Science (GIS), BS

The Bachelor of Science in Geographic Information Science (GIS) offers courses in theory, inquiry, and applications of spatial data that prepare students for the growing field of geospatial professionals. The program builds knowledge through project-based courses that train students in spatial problem solving and computational thinking, and to use geospatial tools and techniques to analyze data that can be communicated visually, orally and in writing. Graduates will be technologically proficient in programming, web mapping, project development, data collection and integration, and cartography. The BS GIS program is offered by the Department of Urban and Regional Planning.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Preparation	3
Major Core	41
Major Electives	3
University Electives	29
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or Specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (3 units)

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (44 units)

Core Courses (41 units)

- GEOG 3 - Spatial Data Literacy 1 *unit(s)*
- GEOG 4 - Geospatial Ethics & Privacy 1 *unit(s)*
- GEOG 70 - Introduction to Geographic Information Systems 4 *unit(s)*
- GEOG 100W - Writing Workshop 3 *unit(s)* (WID)
- GEOG 103 - Colloquium 1 *unit(s)*
- GEOG 107 - Mapping the World 3 *unit(s)* (R)
- GEOG 171 - Advanced Geographic Information Systems 4 *unit(s)*
- GEOG 172 - Cartography and Data Visualization 3 *unit(s)*
- GEOG 173 - Drones and Spatial Data Collection 3 *unit(s)*
- GEOG 175 - Geographic Information Systems Project Development 3 *unit(s)*
- GEOG 178 - Participatory GIS 3 *unit(s)*
- GEOG 181 - Introduction to Remote Sensing 3 *unit(s)*
- GEOG 182 - Programming for GIS 3 *unit(s)*
- GEOG 195 - Open Source GIS 3 *unit(s)*
- GEOG 199 - Senior Seminar 3 *unit(s)*

Major Elective (3 units)

Complete one course from:

- GEOG 187 - Research Experience 3 *unit(s)*
- URBP 148 - Introduction to Spatial Visualization Technology in Urban Planning 1-4 *unit(s)*

University Electives (29 units)

Declaring a minor is recommended.

Total Units Required (120 units)

Geography, BA

The Geography, BA degree offered by the Department of Urban and Regional Planning, prepares students to understand the environment around us and interpret human and non-human patterns across the Earth's surface. The major allows flexibility in course selection while providing a strong foundation in human, physical, and regional aspects of the discipline. Geography at SJSU also features a strong technology component based on applications of Geographic Information Systems (GIS). Geography is essential to the growing need for global literacy and our faculty is committed to working with students to develop the skills that will serve them well in a career or in graduate studies.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	35
Major Preparation	3
Major Core	28
Major Electives	18-20
University Electives	34-36
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or Specific questions.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)

- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (3 units)

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (46-47 units)

Core Geography Courses (28 units)

- GEOG 1 - Physical Geography 3 *unit(s)* (B1)
- GEOG 10 - Cultural Geography 3 *unit(s)* (D)
- GEOG 12 - World Regional Geography 3 *unit(s)* (D)
- GEOG 100W - Writing Workshop 3 *unit(s)* (WID)
- GEOG 105 - Urban Geography 3 *unit(s)*
- GEOG 135 - Research Methods in Geography 3 *unit(s)*
- GEOG 70 - Introduction to Geographic Information Systems 4 *unit(s)*
- GEOG 186 - Field Methods in Geography 3 *unit(s)*
- GEOG 199 - Senior Seminar 3 *unit(s)*

Major Electives (18-20 units)

GEOG 92, GEOG 124, GEOG 180, and GEOG 197 (no more than 12 units) may be substituted for core courses and major electives only with prior advisor approval.

Human Geography (minimum of 6 units)

Students must complete two human geography courses.

- GEOG 112 - Nations, Cultures & Globalization 3 *unit(s)* (V)
- GEOG 113 - Global Cities 3 *unit(s)*
- GEOG 115 - Global Development 3 *unit(s)*
- URBP 101 - The City 3 *unit(s)* (S)
- URBP 136 - Introduction to Land Use Planning 4 *unit(s)*

Physical Geography (minimum of 6 units)

Students must complete two physical geography courses.

- GEOG 107 - Mapping the World 3 *unit(s)* (R)
- GEOG 121 - Population and Global Change 3 *unit(s)*
- GEOG 130 - Natural Resources 3 *unit(s)*
- GEOG 165 - National Parks 3 *unit(s)*

Regional Synthesis (minimum of 3 units)

Complete one regional geography course.

- GEOG 110 - Urbanization in the Global South 3 *unit(s)*
- GEOG 140 - The United States 3 *unit(s)* (S)
- GEOG 160 - East and South Asia 3 *unit(s)*
- GEOG 168 - Sub-Saharan Africa 3 *unit(s)*

Geographic Information Science (minimum of 3 units)

Complete one GIS course.

- GEOG 171 - Advanced Geographic Information Systems 4 *unit(s)*
- GEOG 172 - Cartography and Data Visualization 3 *unit(s)*
- GEOG 181 - Introduction to Remote Sensing 3 *unit(s)*

University Electives (34-36 units)

Declaring a minor is recommended.

Total Units Required (120 units)

Global Studies, BA

Global Studies, offered by the Department of Environmental Studies, is an interdisciplinary program that encourages students to look at the world holistically. The tremendous international migrations of people, movements of goods, technology transfers, and mixing of cultures make it important to study the world as a human community in ways we haven't considered in the past. The program is designed to train future leaders to grapple with some of the most pressing issues of our time using a global perspective. The focus of our program on studying global issues from multiple perspectives provides students the intellectual foundation and the analytical and communication skills to prepare for careers in government, education, NGOs, international development agencies, international philanthropic organizations, law, consulting, global health organizations, writing, and graduate study. We are the only Global Studies program in the San Francisco Bay Area and one of the few in the CSU system that offers an interdisciplinary program that includes a suite of core courses in Global Studies. Global Studies is a relatively new field and our program is at the leading edge of shaping this field for the future.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	6
Major Requirements	55
University Electives	18
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education

Of the 9 units required by the university, 9 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. Exceptions to the GWAR may be found in the Graduation Writing Assessment Requirement (GWAR) section.

This requirement is fulfilled in this major with:

- GLST 100W - Writing Workshop 3 *unit(s)* (WID)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Major Preparation (6 units)

- GLST 1A - Introduction to Global Studies 3 *unit(s)*
- GLST 1B - Introduction to Global Studies 3 *unit(s)* (B2)

Major Requirements (55 units)

Core Courses (9 units)

- GLST 164 - Advanced Seminar in Global Citizenship 3 *unit(s)*
- GLST 179 - Capstone Seminar in Global Studies 3 *unit(s)*

Complete one course from:

- GLST 188 - Special Topics in International Experiences 3 *unit(s)* (V)
- GLST 189 - Global Experience 1-3 *unit(s)*

Major Breadth Courses (24-28 units)

Complete the Global Studies course and one additional course in different departments in these four areas.

Area 1: Global Sustainability (6-7 units)

- GLST 167 - Changing Ecologies of Globalization 3 *unit(s)* (R)

Complete one course from:

- ANTH 129 - Environmental Anthropology 3 *unit(s)*
- BIOL 110 - Biodiversity and Biopolitics 3 *unit(s)* (R)
- COMM 146F - Communication and the Environment 4 *unit(s)*
- ENVS 150 - Introduction to Environmental Thought 3 *unit(s)* (S)
- ENVS 152 - Globalization and the Environment 3 *unit(s)* (R)
- ENVS 159 - Nature and World Cultures 3 *unit(s)* (V)
- GEOG 121 - Population and Global Change 3 *unit(s)*
- GEOL 111 - Geology and the Environment 3 *unit(s)* (R)
- GEOL 112 - Hazards, Risks of Earthquakes and Volcanoes 3 *unit(s)* (R)
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)
- METR 112 - Global Climate Changes 3 *unit(s)* (R)
- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- PHIL 126 - Environmental Ethics and Philosophy 3 *unit(s)*

Area 2: Global Development, Population, Human Rights (6-7 units)

- GLST 143 - Gender, Power, Intl Dev 3 *unit(s)* (V)

Complete one course from:

- ANTH 151 - Modernity and Disease 3 *unit(s)*
- ANTH 132 - Creating Built Worlds 3 *unit(s)*
- BUS5 187 - Global Dimensions of Business 3 *unit(s)*
- ECON 113B - Economic History of Europe 4 *unit(s)*
- ECON 190 - History of Economic Thought 4 *unit(s)*
- GEOG 115 - Global Development 3 *unit(s)*
- HIST 155 - 20th Century World 3 *unit(s)* (V)
- JS 171 - Human Rights and Justice 3 *unit(s)* (V)

- JS 172 - Human Trafficking and Modern Day Slavery 3 *unit(s)*
- JS 173 - Advancing Human Rights Through Diversity, Equity and Inclusion 3 *unit(s)*
- POLS 147 - Globalization 4 *unit(s)*
- POLS 155 - The Wealth of Nations 4 *unit(s)*
- SOCI 118 - Sociology of Human Rights and Social Justice 3 *unit(s)*
- SOCI 160 - Immigration and Identity 3 *unit(s)*
- SOCI 169 - Political Sociology 3 *unit(s)*
- WGSS 102 - The Global Study of Women 3 *unit(s)* (V)
- WGSS 112 - Women in the Global Economy 3 *unit(s)*

Area 3: Global Security and Technology (6-7 units)

- GLST 156 - Technology of the Modern World 3 *unit(s)*

Complete one course from:

- ANTH 136 - Thought Control in Contemporary Society 3 *unit(s)*
- ANTH 146 - Culture and Conflict 3 *unit(s)* (V)
- BUS5 165A - Global Leadership 3 *unit(s)*
- COMM 115P - Communication and Conflict 4 *unit(s)*
- COMM 179 - Global Media and Resistance 3 *unit(s)* (V)
- GEOG 107 - Mapping the World 3 *unit(s)* (R)
- GEOG 112 - Nations, Cultures & Globalization 3 *unit(s)* (V)
- GEOG 70 - Introduction to Geographic Information Systems 4 *unit(s)*
- GEOG 181 - Introduction to Remote Sensing 3 *unit(s)*
- JS 123 - Terrorism, Intelligence, and Security 3 *unit(s)*
- JS 161 - Introduction to Cybercrime 3 *unit(s)*
- MCOM 180 - Independent Study 1-6 *unit(s)*
- POLS 148 - Nationalism and Comparative Political Cultures 4 *unit(s)*
- POLS 150 - War and Peace 3 *unit(s)* (V)
- POLS 152A - International Organizations and NGOs 4 *unit(s)*
- TECH 198 - Technology and Civilization 3 *unit(s)* (V)

Area 4: Global Cultures and Society (6-7 units)

- SOCI 116 - Global Society 3 *unit(s)*

Complete one course from:

- ANTH 107 - Eating Culture: The Anthropology of Food 3 *unit(s)*
- ANTH 115 - The Emerging Global Culture 3 *unit(s)* (V)
- ANTH 148 - Religion and Anthropology 3 *unit(s)*
- ARTH 193A - Worlds of Art and Culture 3 *unit(s)* (V)
- ARTH 193B - East Meets West in Art 3 *unit(s)* (V)
- CA 173 - Thinking About Contemporary World Arts 3 *unit(s)* (V)
- COMM 152I - Communication in World Cultures 4 *unit(s)*
- COMM 173F - Intercultural Communication and Global Understanding 4 *unit(s)*
- COLT 122 - Topics in Comparative World Literature 4 *unit(s)*
- ENGL 117B - Global Film, Literature, and Cultures 3 *unit(s)* (V)

- ENGL 123A - Literatures of the Americas 3 *unit(s)* (V)
- ENGL 123B - Literatures of Africa 3 *unit(s)* (V)
- ENGL 123C - Literatures of the Pacific 3 *unit(s)* (V)
- ENGL 123D - Literatures of Asia 3 *unit(s)* (V)
- ENGL 126 - Holocaust Literature 3 *unit(s)* (V)
- HIST 132 - Advanced Topics in World History 4 *unit(s)* (May be taken twice if topic changes and with advisor approval.)
- HUM 128 - Perspectives on the Twentieth Century: The West in a Global Context 3 *unit(s)* (V)
- LING 122 - English as a World Language 3 *unit(s)* (V)
- MCOM 106 - Global Mass Communication 3 *unit(s)*
- PHIL 120 - Comparative Philosophy Theory & Practice 3 *unit(s)*
- TECH 198 - Technology and Civilization 3 *unit(s)* (V)
- WGSS 189 - Feminist Perspectives on Gender and Religion 3 *unit(s)*

Minor Requirement (12-16 units)

Global Studies majors are required to select a minor field in consultation with the Global Studies advisor.

Major Upper Division Electives (6 units)

Students may take GLST 162 or GLST 192 or electives in the Breadth categories listed above to fulfill this requirement. See a Global Studies Advisor for additional approved Upper Division Electives.

University Electives (18 units)

Total Units Required (120 units)

History, BA

The History BA curriculum offered by the Department of History is designed for those who wish a general liberal education, for those who want a broad foundation for any one of the social sciences, for those who desire advanced degrees in the field of history, and for those who wish to secure the teaching credential.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Requirements	52
University Electives	30
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions

Complete one major-specific 6 unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but the sequence listed below also fulfills major requirements.

U.S. History and Government

- HIST 15 - Essentials of U.S. History 3 unit(s) (D+US1)
- POLS 15 - Essentials of U.S. & California Government 3 unit(s) (D+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (52 units)

Lower Division Major Requirements (15 units)

- HIST 99 - History Fundamentals 3 *unit(s)*

Complete One Sequence From:

World History

- HIST 1A - World History to 1500 3 *unit(s)* (D)
- HIST 1B - World History from 1500 3 *unit(s)* (D)

Western Civilization

- HIST 10A - Western Civilization 3 *unit(s)* (D)
- HIST 10B - Western Civilization 3 *unit(s)* (D)

Complete One Sequence From:

US History

6 units of the GE requirement can be fulfilled by choosing the HIST 15 and POLS 15 courses among the major requirement.

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

American People

- HIST 20A - History of the American People 3 *unit(s)* (US1)
- HIST 20B - History of the American People 3 *unit(s)* (US1)

Upper Division Major Requirements (37 units)

Students who fulfill SJSU Studies Area S with HIST 185 or HIST 188 and/or SJSU Studies Area V with HIST 136, HIST 153 or HIST 155 may need additional upper-division courses to meet the minimum University graduation requirement of 40 upper-division units. Such students should take an additional upper-division History course.

- HIST 100W - History Writers' Workshop 3 *unit(s)* (WID)
- HIST 102 - Historiography 4 *unit(s)*

Field of Study Courses

Upper-division History courses are divided into 4 fields of study: Ancient & Medieval, Europe, United States, and World. 30 units of upper-division courses must include at least 1 course from each field, including at least 2 pre-1750 courses. Consult major advisor for details.

HIST 173 may be counted as either a United States or a World field course. Students who take HIST 173 must inform the major advisor which field they want it to count toward.

Ancient & Medieval

- HIST 104 - Advanced Topics in Ancient History 4 *unit(s)*
- HIST 112 - Ancient West to 500 BCE 4 *unit(s)*
- HIST 114 - The Ancient West, 500 BCE-400 CE 4 *unit(s)*
- HIST 121A - Medieval Worlds, 400-1000 4 *unit(s)*
- HIST 121B - Medieval Worlds, 1000-1500 4 *unit(s)*
- HIST 126 - Advanced Topics in Medieval History 4 *unit(s)*

Europe

- HIST 124 - Early Modern Europe 4 *unit(s)*
- HIST 143 - Europe, 1750-1900 4 *unit(s)*
- HIST 144 - Europe, 1900-1945 4 *unit(s)*
- HIST 145 - Europe and the World Since 1945 4 *unit(s)*
- HIST 146 - Advanced Topics in European History 4 *unit(s)*
- HIST 153 - History of Women in Europe 3 *unit(s)* (SJSU Studies Area V)

United States

- HIST 171 - U.S. Constitutional & Legal History 4 *unit(s)*
- HIST 173 - New World Encounters, 1400-1750 4 *unit(s)*
- HIST 174 - Colonial & Revolutionary America 4 *unit(s)*
- HIST 175 - Inventing America, 1800-1860 4 *unit(s)*
- HIST 176 - The Civil War and Reconstruction 4 *unit(s)*
- HIST 177 - Industrial America, 1877-1920 4 *unit(s)*
- HIST 178 - Crash, Depression and War, 1920-1950 4 *unit(s)*
- HIST 179 - Cold War America, 1950-Present 4 *unit(s)*
- HIST 181 - Advanced Topics in American History 4 *unit(s)*
- HIST 185 - LGBTQ+ History in the United States 3 *unit(s)* (SJSU Studies Area S)
- HIST 188 - History of Women in the United States 3 *unit(s)* (SJSU Studies Area S)
- HIST 189A - California History to 1900 4 *unit(s)* (GE Area US3)
- HIST 189B - California History Since 1900 4 *unit(s)* (GE Area US3)

World

- HIST 109A - History of China 4 *unit(s)*
- HIST 109B - History of China 4 *unit(s)*
- HIST 110A - History of Japan 4 *unit(s)*
- HIST 110B - History of Japan 4 *unit(s)*
- HIST 130 - Military History to 1500 4 *unit(s)*
- HIST 131 - Military History from 1500 4 *unit(s)*
- HIST 132 - Advanced Topics in World History 4 *unit(s)*
- HIST 136 - World Jewish History 3 *unit(s)*
- HIST 155 - 20th Century World 3 *unit(s)* (SJSU Studies Area V)
- HIST 162 - Colonial Latin America 4 *unit(s)*
- HIST 163 - Modern Latin America, 1800-Present 4 *unit(s)*
- HIST 167 - Advanced Topics in Latin American History 4 *unit(s)*
- HIST 173 - New World Encounters, 1400-1750 4 *unit(s)*

Pre-1750 (select at least two)

- HIST 104 - Advanced Topics in Ancient History 4 unit(s)
- HIST 109A - History of China 4 unit(s)
- HIST 110A - History of Japan 4 unit(s)
- HIST 112 - Ancient West to 500 BCE 4 unit(s)
- HIST 114 - The Ancient West, 500 BCE-400 CE 4 unit(s)
- HIST 121A - Medieval Worlds, 400-1000 4 unit(s)
- HIST 121B - Medieval Worlds, 1000-1500 4 unit(s)
- HIST 124 - Early Modern Europe 4 unit(s)
- HIST 126 - Advanced Topics in Medieval History 4 unit(s)
- HIST 130 - Military History to 1500 4 unit(s)
- HIST 136 - World Jewish History 3 unit(s)
- HIST 162 - Colonial Latin America 4 unit(s)
- HIST 173 - New World Encounters, 1400-1750 4 unit(s)
- HIST 174 - Colonial & Revolutionary America 4 unit(s)

University Electives and/or Minor (30 units)

Minor recommended, but not required; consult history advisor.

Total Units Required (120 units)

A checklist of requirements is available in department office.

Justice Studies, BS

The undergraduate program in Justice Studies, offered by the Department of Justice Studies, provides students with an interdisciplinary curriculum that engages in critical analysis of justice issues. Core classes focus on theory and empirical research that addresses the relationship between law, justice, the justice system, and society. Electives address a number of more specialized and topical justice-related issues.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	6
Major Requirements	45
University Electives	28
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Requirements for the major (all courses in preparation, core, and concentration/specialization) must be completed with a grade of "C or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (6 units)

Complete one course from:

- FS 11 - Survey of Forensic Science 3 *unit(s)*
- JS 10 - Introduction to Justice Studies 3 *unit(s)*
- JS 12 - Introduction to Legal Studies 3 *unit(s)*
- JS 25 - Introduction to Human Rights and Justice 3 *unit(s)* (D)

Statistics Course

Complete one course:

- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (45 units)

Justice Studies Core (24 units)

- JS 100W - Writing Workshop 3 *unit(s)* (*WID*)
- JS 101 - Critical Issues and Ideas in Justice 3 *unit(s)*
- JS 114 - Research Methods in Justice Studies 3 *unit(s)*
- JS 132 - Race, Gender, Inequality and the Law 3 *unit(s)* (*S*)
- JS 151 - Criminological Theory 3 *unit(s)*
- JS 171 - Human Rights and Justice 3 *unit(s)* (*V*)

Complete One Course From:

- JS 141 - Record Clearance Project Representation 3 *unit(s)*
- JS 142 - Record Clearance Project - Advanced Study and Community Involvement 3 *unit(s)*
- JS 181 - Internship: Justice Studies 1-6 *unit(s)* (3 *units* required)

Complete One Course From:

- FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues 3 *unit(s)*
- JS 189 - Senior Seminar: Contemporary Problems 3 *unit(s)*

Additional Courses (21 units)

Students Must Complete 21 Units from the Following Areas

Area A: Theory Courses (6-9 units)

Complete six to nine units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- JS 103 - Courts and Society 3 *unit(s)*
- JS 153 - Crime and Justice Across the Life Course 3 *unit(s)*
- JS 157 - Deviance and Justice 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)* (*When class topic Area A Theories is offered.*)

Area B: Methodology Courses (3-6 units)

Complete three to six units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- JS 107 - Justice Management and Ethics 3 *unit(s)*
- JS 117 - Qualitative Research Methods 3 *unit(s)*
- JS 131 - Crisis Intervention, Mediation and Restorative Justice 3 *unit(s)*
- JS 143 - Criminal Evidence and Procedure 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)* (*When class topic Area B Methods is offered.*)

Area C: Critical Inquiry Courses (3-6 units)

Complete three to six units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- FS 171 - Forensic Criminology 3 *unit(s)*

- JS 122 - Drugs and Society 3 unit(s)
- JS 128 - Punishment, Culture and Society 3 unit(s)
- JS 130 - Sexuality & Justice 3 unit(s)
- JS 136 - Family and Community Violence 3 unit(s) (S)
- JS 144 - Criminal Law 3 unit(s)
- JS 146 - Guns and the Law 3 unit(s)
- JS 150 - Gender and Crime 3 unit(s)
- JS 174 - Reproductive Justice 3 unit(s)
- JS 185 - Special Topics in Law and Justice 3 unit(s) (When class topic Area C Critical Inquiry is offered.)

Area D: Local, Transnational, Historical Courses (3-6 units)

Complete three to six units from:

- FS 160 - Special Topics in Forensic Science 1-5 unit(s)
- FS 170 - Forensic Science in Human Rights Investigations 3 unit(s)
- JS 121 - Media and Justice 3 unit(s)
- JS 123 - Terrorism, Intelligence, and Security 3 unit(s)
- JS 127 - Immigration and Justice 3 unit(s)
- JS 129 - International Crime and Deviance 3 unit(s)
- JS 137 - Collaborative Response to Family Violence 3 unit(s)
- JS 145 - White Collar Crime 3 unit(s)
- JS 156 - Gangs, Criminal Syndicates & Justice 3 unit(s)
- JS 158 - The Prison Community 3 unit(s)
- JS 161 - Introduction to Cybercrime 3 unit(s)
- JS 172 - Human Trafficking and Modern Day Slavery 3 unit(s)
- JS 173 - Advancing Human Rights Through Diversity, Equity and Inclusion 3 unit(s)
- JS 185 - Special Topics in Law and Justice 3 unit(s) (When class topic Area D Local, Transnational, Historical is offered.)

Area E: Experiential Learning Courses (0-6 units)

Complete up to six units from:

- JS 140 - Record Clearance Project 3 unit(s)
- JS 141 - Record Clearance Project Representation 3 unit(s)
- JS 142 - Record Clearance Project - Advanced Study and Community Involvement 3 unit(s)
- JS 179 - Human Rights Practicum and Seminar 3 unit(s)
- JS 180 - Individual Studies 1-3 unit(s)
- JS 181 - Internship: Justice Studies 1-6 unit(s) (3 units required) (JS 181 may be taken again for elective credit.)
- JS 182 - Themis: Journal of Justice Studies and Forensic Science 3 unit(s)
- JS 184 - Directed Reading 1-3 unit(s)

University Electives (28 units)

A minor is strongly recommended

Total Units Required (120 units)

Justice Studies, Criminology Concentration, BS

The undergraduate program in Justice Studies, offered by the Department of Justice Studies, provides students with an interdisciplinary curriculum that engages in critical analysis of justice issues. Core classes focus on theory and empirical research that addresses the relationship between law, justice, the justice system, and society. Electives address a number of more specialized and topical justice-related issues.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	6
Major Core Requirements	24
Concentration Requirements	21
University Electives	28
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

Major-Specific Graduation Requirements

All courses in the Preparation and Requirements for the major (all courses in preparation, core, and concentration/specialization) must be completed with a grade of "C or better".

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (6 units)

Complete one course from:

- FS 11 - Survey of Forensic Science 3 unit(s)
- JS 10 - Introduction to Justice Studies 3 unit(s)
- JS 12 - Introduction to Legal Studies 3 unit(s)
- JS 25 - Introduction to Human Rights and Justice 3 unit(s) (D)

Statistics Course

Complete one course:

- JS 15 - Introductory Statistics in Justice Studies 3 unit(s) (B4)
- STAT 95 - Elementary Statistics 3 unit(s) (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (45 units)

Justice Studies Core (24 units)

- JS 100W - Writing Workshop 3 unit(s) (WID)
- JS 101 - Critical Issues and Ideas in Justice 3 unit(s)
- JS 114 - Research Methods in Justice Studies 3 unit(s)
- JS 132 - Race, Gender, Inequality and the Law 3 unit(s) (S)
- JS 151 - Criminological Theory 3 unit(s)
- JS 171 - Human Rights and Justice 3 unit(s) (V)

Complete one course:

- JS 141 - Record Clearance Project Representation 3 unit(s)
- JS 142 - Record Clearance Project - Advanced Study and Community Involvement 3 unit(s)
- JS 181 - Internship: Justice Studies 1-6 unit(s) (3 units required)

Complete one course:

- FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues 3 unit(s)
- JS 189 - Senior Seminar: Contemporary Problems 3 unit(s)

Concentration Required Courses (12 units)

Students must complete the following courses

- JS 102 - Police and Society 3 unit(s)
- JS 104 - Penal Politics & Institutions 3 unit(s)

- JS 152 - Juvenile Delinquency & Justice 3 *unit(s)*
- JS 155 - Victimology 3 *unit(s)*

Concentration Electives (9 units)

Students must complete 9 units from the following areas:

Area A: Theory Courses (0-6 units)

Complete up to six units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- JS 103 - Courts and Society 3 *unit(s)*
- JS 153 - Crime and Justice Across the Life Course 3 *unit(s)*
- JS 157 - Deviance and Justice 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)* (*When class topic Area A Theories is offered.*)

Area B: Methodology Courses (0-6 units)

Complete up to six units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- JS 107 - Justice Management and Ethics 3 *unit(s)*
- JS 117 - Qualitative Research Methods 3 *unit(s)*
- JS 131 - Crisis Intervention, Mediation and Restorative Justice 3 *unit(s)*
- JS 143 - Criminal Evidence and Procedure 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)*
(*When class topic Area B Methodologies is offered.*)

Area C: Critical Inquiry Courses (0-6 units)

Complete up to six units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- FS 171 - Forensic Criminology 3 *unit(s)*
- JS 122 - Drugs and Society 3 *unit(s)*
- JS 128 - Punishment, Culture and Society 3 *unit(s)*
- JS 130 - Sexuality & Justice 3 *unit(s)*
- JS 136 - Family and Community Violence 3 *unit(s)* (S)
- JS 144 - Criminal Law 3 *unit(s)*
- JS 146 - Guns and the Law 3 *unit(s)*
- JS 150 - Gender and Crime 3 *unit(s)*
- JS 174 - Reproductive Justice 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)* (*When class topic Area C Critical Inquiry is offered.*)

Area D: Local, Transnational, Historical Courses (0-6 units)

Complete up to six units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*

- FS 170 - Forensic Science in Human Rights Investigations 3 unit(s)
- JS 121 - Media and Justice 3 unit(s)
- JS 123 - Terrorism, Intelligence, and Security 3 unit(s)
- JS 127 - Immigration and Justice 3 unit(s)
- JS 129 - International Crime and Deviance 3 unit(s)
- JS 137 - Collaborative Response to Family Violence 3 unit(s)
- JS 145 - White Collar Crime 3 unit(s)
- JS 156 - Gangs, Criminal Syndicates & Justice 3 unit(s)
- JS 158 - The Prison Community 3 unit(s)
- JS 161 - Introduction to Cybercrime 3 unit(s)
- JS 172 - Human Trafficking and Modern Day Slavery 3 unit(s)
- JS 173 - Advancing Human Rights Through Diversity, Equity and Inclusion 3 unit(s)
- JS 185 - Special Topics in Law and Justice 3 unit(s) (*When class topic Area D Local, Transnational, Historical is offered.*)

Area E: Experiential Learning Courses (0-6 units)

Complete up to six units from:

- JS 140 - Record Clearance Project 3 unit(s)
- JS 141 - Record Clearance Project Representation 3 unit(s)
- JS 142 - Record Clearance Project - Advanced Study and Community Involvement 3 unit(s)
- JS 179 - Human Rights Practicum and Seminar 3 unit(s)
- JS 180 - Individual Studies 1-3 unit(s)
- JS 182 - Themis: Journal of Justice Studies and Forensic Science 3 unit(s)
- JS 184 - Directed Reading 1-3 unit(s)

University Electives (28 units)

A minor is strongly recommended

Total Units Required (120 units)

Political Science, BA

The BA Political Science, offered by the Department of Political Science, provides students with an understanding of politics and the political process and prepares them for their lifelong responsibilities as citizens, as well as furthering their skills in critical analysis and communication. The major in political science may lead to a wide variety of careers, including teaching, the law, business, and public service.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Requirements	46-50
University Electives	26-30

Total **120**

Major-Specific Graduation Requirements

Capstone course must be completed with a C- or better graduate.

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Undergraduate Graduation Requirements

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details. Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (3 units)

The 6 units of American Institutions coursework shown below may also fulfill GE Area D. Other courses meet the American Institutions requirement, but may not include additional GE areas.

Consult Major Advisor for department recommended coursework to meet GE requirement.

This major includes:

- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D/US23)

Complete one of the following courses for US1:

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D/US1)
- HIST 20A - History of the American People 3 *unit(s)* (US1)
- HIST 20B - History of the American People 3 *unit(s)* (US1)
- HIST 170 - Topics in American History 3 *unit(s)* (US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S/US1)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (46-50 units)

Lower Division Core Courses (12 units)

- POLS 2 - Introduction to Comparative Politics 3 *unit(s)* (D)
- POLS 3 - Introduction to Political Thought 3 *unit(s)* (C2)
- POLS 4 - Introduction to International Relations 3 *unit(s)* (D)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D/US23)

Upper Division Core Courses (21-22 units)

- POLS 100W - Writing Workshop 3 *unit(s)* (WID)
- POLS 100M - Political Inquiry 4 *unit(s)* A grade of C- or better is required

Additional Upper Division Core Courses (14-15 units)

Complete 14-15 units from the following. One course from each of the four fields is required.

U.S. Government and Politics (3-4 units)

Complete one course:

- POLS 102 - State Government and Politics 4 *unit(s)* (US3)
- POLS 103 - Local Government and Politics 4 *unit(s)*
- POLS 105 - Congress 4 *unit(s)*
- POLS 106 - The United States Presidency 4 *unit(s)*
- POLS 108 - Political Participation 4 *unit(s)*
- POLS 111 - Political Movements 4 *unit(s)*
- POLS 114 - Introduction to Public Administration 3 *unit(s)*
- POLS 121A - Constitutional Law: Institutional Powers 4 *unit(s)*
- POLS 122 - Judicial Politics 4 *unit(s)*
- POLS 130 - American Public Policy 4 *unit(s)*

Comparative Politics (4 units)

Complete one course:

- POLS 141 - Politics of Post-Communist Countries 4 *unit(s)*

- POLS 142 - African Politics *4 unit(s)*
- POLS 144 - Middle Eastern Politics *4 unit(s)*
- POLS 145 - Asian Politics *4 unit(s)*
- POLS 146 - Latin American Politics *4 unit(s)*
- POLS 147 - Globalization *4 unit(s)*
- POLS 148 - Nationalism and Comparative Political Cultures *4 unit(s)*

International Relations (4 units)

Complete one course:

- POLS 152A - International Organizations and NGOs *4 unit(s)*
- POLS 153 - European Union *4 unit(s)*
- POLS 154 - U.S. Foreign Policy: Formulation and Administration *4 unit(s)*
- POLS 155 - The Wealth of Nations *4 unit(s)*
- POLS 157 - International Security *4 unit(s)*

Political Thought (3 units)

Complete one course:

- POLS 160A - Classical Political Thought *3 unit(s)*
- POLS 160B - Modern Political Thought *3 unit(s)*
- POLS 160C - Recent Political Thought *3 unit(s)*
- POLS 163 - American Political Thought *3 unit(s)*

Additional Upper Division Courses (13-16 units)

Upper Division Electives (9-12 units)

Three additional upper division courses from POLS 102-POLS 199 (except POLS 120, POLS 150 or POLS 170V).

Capstone Course (4 units)

A grade of C- or better is required. Complete one course:

- POLS 181C - Internship Capstone *4 unit(s)*
- POLS 190 - Senior Seminar *4 unit(s)*

University Electives (26-30 units)

Students may choose Political Science or other electives.

Total Units Required (120 units)

Psychology, BA

The undergraduate degree, offered by the Department of Psychology, assures a broad coverage of the major areas of content and methods in psychology identified by the American Psychological Association as the backbone of a strong degree program. The goal of the breadth part of the degree requirements is to provide a strong background in general psychology. In addition, sufficient flexibility is offered through choices in fulfilling these requirements and

through the electives so that students, in consultation with their advisors, can design a program of study which focuses on each student's particular area of interest.

A carefully prepared multi-year program of study will ensure an appropriate sequencing of required courses (e.g., BIOL 21 or BIOL 65 is a prerequisite to PSYC 30, STAT 95 is a prerequisite to PSYC 18 and PSYC 100W, PSYC 100W is a prerequisite for PSYC 118, PSYC 118 is also a pre- or co-prerequisite for PSYC 190/PSYC 195). Use advisor's expertise and the MyGPS planning tools for GE, SJSU Studies, and American Institutions course selection to ensure a strong foundation for future coursework. Seeking advising is especially important for those at risk for probation, those in the honors program, and those planning to go on to graduate school in psychology. The two and four-year planners give additional guidance in designing a particular program of study including suggestions about the order in which to take classes even if they are not governed by official prerequisite requirements. All of these materials as well as the extra coursework and other requirements for Departmental Honors are available on the department website or the department office.

Once declared as a psychology major, there are no minimum grade requirements for any particular course in the major other than a C- or better for the lower division statistics requirement, a C or better for PSYC 100W, and an overall 2.0 average across the courses in the major (i.e., a D- can "count" towards meeting psychology requirements even if it does not count towards General Education requirements).

The registration system may allow registration in a course prior to completion of the posted lower division prerequisite(s)-such enrollment neither removes the expectation for completion of the prerequisite prior to taking the course nor removes the prerequisite coursework from the students' anticipated program of study. This is particularly relevant regarding BIOL 21/BIOL 65 prior to PSYC 30 and PSYC 18 and PSYC 100W prior to PSYC 118.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Preparation	3-4
Major Requirements	48
University Electives	27-28
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or Specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Preparation (3-4 units)

Complete one course from:

- BIOL 21 - Human Biology 3 *unit(s)* (B2+B3)
- BIOL 65 - Human Anatomy 4 *unit(s)* (B2+B3)
- BIOL 65O - Human Anatomy 4 *unit(s)* (B2+B3)

Major Requirements (48 units)

Lower Division Core (12 units)

- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)
- PSYC 18 - Introduction to Research Methods 3 *unit(s)*
- PSYC 30 - Introductory Psychobiology 3 *unit(s)*
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (*UNVS 15 may be used in lieu of the statistics course required by this major. A grade of C- or better is required to meet this statistics requirement.*)

Upper Division Core (27 units)

- PSYC 100W - Writing Workshop 3 *unit(s)* (WID)
- PSYC 118 - Advanced Research Methods in Psychology 3 *unit(s)* OR PSYC 120 - Advanced Research Methods and Design 4 *unit(s)*

Complete One Course From:

- PSYC 102 - Psychology of Childhood 3 *unit(s)*
- PSYC 112 - Psychology of Adolescence 3 *unit(s)*
- PSYC 114 - Psychology of Aging 3 *unit(s)*

Complete Two Courses From:

- PSYC 129 - Neuroscience 3 *unit(s)*
- PSYC 135 - Cognition 3 *unit(s)*
- PSYC 155 - Human Learning 3 *unit(s)*
- PSYC 158 - Perception 3 *unit(s)*

Complete One Course From:

- PSYC 110 - Adult Psychopathology 3 *unit(s)*
- PSYC 142 - Child Psychopathology 3 *unit(s)*

Complete One Course From:

- PSYC 139 - Psychology of Personality 3 *unit(s)*
- PSYC 154 - Social Psychology 3 *unit(s)*

Complete One Course From:

- PSYC 117 - Psychological Tests and Measures 3 *unit(s)*
- STAT 115 - Intermediate Statistics 3 *unit(s)*

Complete One Course From:

- PSYC 190 - Current Issues Capstone 3 *unit(s)*
- PSYC 195 - Honors Seminar in Psychology 3 *unit(s)*

Psychology Electives (9 units)

In addition to any course with a Psychology or Statistics prefix not used elsewhere within the Psychology, BA major program, other courses that can be used as Psychology Elective units include: BIOL 129, ENGR 120, GERO 114, JS 161, KIN 167, PH 126, PH 145, POLS 177, SOCI 145.

- Three units of upper or lower division psychology courses 3 *unit(s)*
- Six units of upper division psychology courses 6 *unit(s)*

PSYC 191 satisfies SJSU Studies Area S

University Electives (27-28 units)

Total Units Required (120 units)

Social Science, Preparation for Teaching (Single Subject), BA

This major is designed for students interested in teaching history, political science (government), economics, or ethnic studies in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Social Science Preparation for Teaching. The BA Social Science Preparation for Teaching, offered by the Department of History, is an approved program by the California Commission on Teacher Credentialing (CCTC). Students completing the program qualify for a waiver of the subject matter examination (CSET for Social Science) required to earn a teaching credential.

Maintaining a minimum grade point average (GPA) of at least 2.75 and completion of the program will not guarantee admission to the credential program. Like all other applicants, students must meet credential program standards and undergo screening for admission. See How to Become a Teacher for information on application and admission to credential programs.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	38
Major Requirements	64-66
University Electives	16-18
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions

The 6 units of American Institutions (US123) requirement may be satisfied in the major (if identified below) or by transfer from a community college or university. Other courses meet the American Institutions requirement, but may not include additional GE areas.

Consult major advisor for department recommended coursework to meet GE requirement.

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (64-66 units)

Lower Division (15 units)

- HIST 1A - World History to 1500 3 *unit(s)* (D)
- HIST 1B - World History from 1500 3 *unit(s)* (D)
- HIST 99 - History Fundamentals 3 *unit(s)*

Complete One Sequence

Complete one sequence of U.S. History and Government courses from:

African American U.S. History & Government

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American U.S. History and Government

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano U.S. History and Government

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

Upper Division Core (49-51 units)

- CCS 185 - Teaching in a Diverse Society 3 *unit(s)*
- ECON 109 - Analysis of Economic Issues for Teachers 3 *unit(s)*
- HIST 100W - History Writers' Workshop 3 *unit(s)* (WID)
- POLS 101 - American Government for Teachers 3 *unit(s)*
- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)* (S)
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)
- SOCS 195 - Social Science Teacher Preparation 3 *unit(s)*
- SOCI 177 - Sociology of Education 3 *unit(s)*
- Six Upper Division U.S. History Courses (approved by Social Science Teacher Preparation Advisor) 22-24 *unit(s)*

University Electives (16-18 units)

Students are strongly encouraged to take elective courses in or pursue a minor in History.

Total Units Required (120 units)

Sociology, BA

The BA in Sociology, offered by the Department of Sociology and Interdisciplinary Social Sciences, educates students about social processes that create, maintain, and transform social institutions and social identities. Sociology provides a framework for understanding social behavior in groups, social change and inequality in society, and solutions to social problems. Analytical and research skills speak to the needs of a changing world. The degree offers students the widest flexibility in terms of future career choices.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Requirements	42
University Electives	34
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (42 units)

Core Courses (27 units)

- SOCI 1 - Introduction to Sociology 3 *unit(s)* (D)
- SOCI 80 - Social Problems 3 *unit(s)* (D)
- SOCI 100W - Writing Workshop 3 *unit(s)* (WID)
- SOCI 101 - Social Theory 3 *unit(s)*
- SOCI 104 - Quantitative Research Methods 3 *unit(s)*
- SOCI 105 - Qualitative Research Methods 3 *unit(s)*
- SOCI 116 - Global Society 3 *unit(s)*

Statistics Course (3 units)

Complete one course:

- SOCI 15 - Statistical Applications in the Social Sciences 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major)

Complete one course (3 units):

- SOCI 105B - Advanced Qualitative Research Methods 3 *unit(s)*
- SOCI 181B - Sociology Career Capstone 3 *unit(s)*

Additional Requirements (15 units)

Complete one course (3 units):

- SOCI 118 - Sociology of Human Rights and Social Justice 3 *unit(s)*
- SOCI 140 - Sociology of Media 3 *unit(s)*
- SOCI 146 - Work, Power, and Leisure 3 *unit(s)*
- SOCI 160 - Immigration and Identity 3 *unit(s)*
- SOCI 161 - City Life 3 *unit(s)*
- SOCI 162 - Race and Ethnic Relations 3 *unit(s)* (S)
- SOCI 163 - Social Change 3 *unit(s)*
- SOCI 164 - Social Action 3 *unit(s)*
- SOCI 165 - Poverty, Wealth and Privilege 3 *unit(s)*
- SOCI 166 - Medical Sociology 3 *unit(s)*
- SOCI 169 - Political Sociology 3 *unit(s)*
- SOCI 177 - Sociology of Education 3 *unit(s)*

Complete one course (3 units):

- SOCI 151 - Violence in the Family 3 *unit(s)*
- SOCI 154 - Sociology and Non-Conforming Behavior 3 *unit(s)*
- SOCI 170 - Sociology of Family 3 *unit(s)*
- SOCI 171 - Person and Society 3 *unit(s)*
- SOCI 172 - Lesbian, Gay, Bi, Transgender Studies 3 *unit(s)*
- SOCI 173 - Socialization and Identity 3 *unit(s)*
- SOCI 174 - Sexualities 3 *unit(s)*
- SOCI 175 - Sociology of Masculinities and Femininities 3 *unit(s)*
- SOCI 176 - Sociology of Everyday Life 3 *unit(s)*
- SOCI 178 - Sociology of Childhood 3 *unit(s)*

Upper Division Sociology Courses (9 units):

- Select any additional three upper division Sociology courses including those listed above* 9 *unit(s)*

University Electives (34 units)

A minor is strongly recommended.

Total Units Required (120 units)

*SOCI 120, SOCI 180, SOCI 181, SOCI 196 (Experimental Courses) and SOCI 199H may be applied to the major when they have direct relevance; such relevance is determined by an advisor.

Double major or double concentration requirements: contact the Department of Sociology and Interdisciplinary Social Sciences for an appointment with a department advisor.

Sociology, Community Change Concentration, BA (Not Accepting Students)

The Department of Sociology and Interdisciplinary Social Sciences (SISS) educates students about the social processes that create, maintain, and transform our society. The major uses sociological foundations and applications as well as interdisciplinary approaches to the study of society and in teacher education training. Sociologists analyze

how social institutions and social structures such as the economy, politics, education, the family, mass media, and the criminal justice system affect individuals in society. The major provides students with the skills and knowledge to navigate the social, political, economic, historical and cultural issues that build and sustain effective leadership in our complex global society.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	41
Major Core Requirements	27
Concentration Requirements	15
University Electives	37
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (27 units)

Of the 39 units required by the university, 12 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (42 units)

Core Courses (27 units)

- SOCI 1 - Introduction to Sociology 3 unit(s) (D)
- SOCI 80 - Social Problems 3 unit(s) (D)
- SOCI 101 - Social Theory 3 unit(s)
- SOCI 100W - Writing Workshop 3 unit(s) (WID)
- SOCI 104 - Quantitative Research Methods 3 unit(s)
- SOCI 105 - Qualitative Research Methods 3 unit(s)
- SOCI 116 - Global Society 3 unit(s)

Statistics Course

Complete one course:

- SOCI 15 - Statistical Applications in the Social Sciences 3 unit(s) (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Complete One Course From:

- SOCI 105B - Advanced Qualitative Research Methods 3 unit(s)
- SOCI 181B - Sociology Career Capstone 3 unit(s)

Community Change Concentration (15 units)

- SOCI 163 - Social Change 3 unit(s)
- SOCI 164 - Social Action 3 unit(s)

Complete Three Courses From:

- SOCI 57 - Community Involvement and Personal Growth 3 unit(s) (E)
- SOCI 118 - Sociology of Human Rights and Social Justice 3 unit(s)
- SOCI 120 - Contemporary Social Issues 3 unit(s)
- SOCI 146 - Work, Power, and Leisure 3 unit(s)
- SOCI 160 - Immigration and Identity 3 unit(s)
- SOCI 161 - City Life 3 unit(s)
- SOCI 162 - Race and Ethnic Relations 3 unit(s) (S)
- SOCI 165 - Poverty, Wealth and Privilege 3 unit(s)
- SOCI 166 - Medical Sociology 3 unit(s)
- SOCI 169 - Political Sociology 3 unit(s)
- SOCI 171 - Person and Society 3 unit(s)
- SOCI 199H - Senior Honors Project 1-4 unit(s)

University Electives (37 units)

A minor is strongly recommended.

Total Units Required (120 units)

*SOC1 120, SOC1 180, SOC1 181, SOC1 196 (Experimental Courses) and SOC1 199H may be applied to the major when they have direct relevance to the concentration; such relevance is determined by approval of an advisor.

Sociology, Race and Ethnic Studies Concentration, BA (Not Accepting Students)

The Department of Sociology and Interdisciplinary Social Sciences (SISS) educates students about the social processes that create, maintain, and transform our society. The major uses sociological foundations and applications as well as interdisciplinary approaches to the study of society and in teacher education training. Sociologists analyze how social institutions and social structures such as the economy, politics, education, the family, mass media, and the criminal justice system affect individuals in society. The major provides students with the skills and knowledge to navigate the social, political, economic, historical and cultural issues that build and sustain effective leadership in our complex global society.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Core Requirements	27
Concentration Requirements	15-16
University Electives	33-34
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (30 units)

Of the 39 units required by the university, 9 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (6 units)

Of the 9 units required by the university, 3 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)

- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (42-43 units)

Core Courses (27 units)

- SOCI 1 - Introduction to Sociology 3 *unit(s)* (D)
- SOCI 15 - Statistical Applications in the Social Sciences 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)
- SOCI 80 - Social Problems 3 *unit(s)* (D)
- SOCI 100W - Writing Workshop 3 *unit(s)* (WID)
- SOCI 101 - Social Theory 3 *unit(s)*
- SOCI 104 - Quantitative Research Methods 3 *unit(s)*
- SOCI 105 - Qualitative Research Methods 3 *unit(s)*
- SOCI 116 - Global Society 3 *unit(s)*

Complete One Course From:

- SOCI 105B - Advanced Qualitative Research Methods 3 *unit(s)*
- SOCI 181B - Sociology Career Capstone 3 *unit(s)*

Race and Ethnic Studies Courses (15-16 units)

Concentration Core (3 units)

Complete one course from:

- AAS 185 - Ethnic Studies Methodologies 3 *unit(s)*
- SOCI 162 - Race and Ethnic Relations 3 *unit(s)* (S)

Race and Ethnic Studies Breadth (12-13 units)

Complete one course from each of the following areas:

Area 1- Asian American Studies (3-4 units)

- AAS 125 - Filipino Experience in the United States 3 *unit(s)*
- AAS 170 - Special Topics in Asian American Studies 3 *unit(s)*
- AAS 175 - Asian American Communities 3 *unit(s)* (S)
- AAS 186 - Southeast Asian Diaspora in the US 3 *unit(s)*
- An upper division AAS Courses 3-4 *unit(s)*

Area 2- African American Studies (3 units)

- AFAM 112 - Black Immigrant Communities 3 *unit(s)*
- AFAM 120 - Sociology of Black Communities 3 *unit(s)*
- AFAM 125 - Black Kinship in the US - Black Families Past and Present 3 *unit(s)*
- AFAM 134 - The Black Civil Rights Movements 3 *unit(s)*

Area 3- Chicana and Chicano Studies (3 units)

- CCS 115 - Chicana/o Families 3 *unit(s)*
- CCS 120 - Political Economy and Chicana/o Communities 3 *unit(s)*
- CCS 125 - Chicana/o Community Studies 3 *unit(s)*
- CCS 127 - Chicanas/os and the Criminal Justice System 3 *unit(s)*
- CCS 130 - Chicanas and Chicanos in American Society 3 *unit(s)* (S)
- CCS 135 - Contemporary Chicana/o Issues 3 *unit(s)*

Area 4- Native American Studies (3 units)

- ANTH 164 - North America before 1492 3 *unit(s)*
- ANTH 175 - Anthropology of Native America 3 *unit(s)*
- ANTH 176 - Native California: Past and Present 3 *unit(s)*
- SOCI 142 - Critical Native American Studies 3 *unit(s)*

University Electives (33-34 units)

A minor is strongly recommended.

Total Units Required (120 units)

*SOCI 120, SOCI 180, SOCI 181, SOCI 196 (Experimental Courses) and SOCI 199H may be applied to the concentration when they have direct relevance; such relevance is determined by an advisor.

Women, Gender, and Sexuality Studies, BA

The Women, Gender, and Sexuality Studies (WGSS) Program, offered by the Department of Sociology and Interdisciplinary Social Sciences at San Jose State, is committed to interdisciplinary scholarship and teaching based on global feminist frameworks. WGSS curriculum investigates how lives are shaped by gender and gender identity, race, class, sexuality, and nation. The program emphasizes the importance of understanding gender as integral to social and political structures of power. Students will obtain skills to cultivate critical thinking, cultivation of dialogue, coalition building, appreciation of diversity, and contribution to social change based on feminist frameworks. The goal of the WGSS program includes integrating the academic and experiential, thereby contributing to social change and justice.

- Program Learning Outcomes

Summary of Degree Units

University Graduation Requirements	44
Major Core Requirements	39
University Electives	37
Total	120

Program Roadmaps

The 4-Year Roadmap is available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums). Associate Degrees (ADT) Pathways are also available online.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (33 units)

Of the 39 units required by the university, 6 units may be satisfied by coursework outlined below. Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Note: Students who have completed the ADT Transfer degree (under SB 1440) for this major will have completed all lower division GE requirements and should follow the 60 unit guarantee roadmap. Meet with an advisor prior to registering for your first semester for the 60 unit roadmap or specific questions.

Upper Division General Education (3 units)

Of the 9 units required by the university, 6 units may be satisfied by coursework outlined below. Consult with a major advisor for details.

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (39 units)

Core Courses (18 units)

- WGSS 10 - Women, Gender, and Sexuality Studies 3 *unit(s)* (D)
- WGSS 20 - Women of Color in the U.S. 3 *unit(s)* (D)

- SOCI 100W - Writing Workshop 3 *unit(s)* (WID)
- SOCI 105 - Qualitative Research Methods 3 *unit(s)*
- WGSS 101 - Sex, Power, and Politics 3 *unit(s)* (S)
- WGSS 102 - The Global Study of Women 3 *unit(s)* (V)

Complete Four Courses (12 units)

- WGSS 112 - Women in the Global Economy 3 *unit(s)*
- WGSS 114 - Politics of Mothering and Reproduction 3 *unit(s)*
- WGSS 135 - Trans Studies: Identities, Embodiment, & Politics 3 *unit(s)*
- WGSS 160 - Queering Gender, Race, and Class 3 *unit(s)*
- WGSS 169 - Sexualities and the Body 3 *unit(s)*
- WGSS 189 - Feminist Perspectives on Gender and Religion 3 *unit(s)*

Major Electives (9 units)

Complete 3 courses:

- CCS 160 - Gender and Sexuality in the Chicana/o Community 3 *unit(s)* (S)
- SOCI 170 - Sociology of Family 3 *unit(s)*
- SOCI 172 - Lesbian, Gay, Bi, Transgender Studies 3 *unit(s)*
- SOCI 174 - Sexualities 3 *unit(s)*
- WGSS 107 - Psychology of Women 3 *unit(s)*
- WGSS 121 - Philosophy and Feminism 3 *unit(s)*
- WGSS 131 - Gender, Sexuality, and Religion 3 *unit(s)*
- WGSS 156 - Black Women's Writing 3 *unit(s)*
- WGSS 175 - Sociology of Masculinities and Femininities 3 *unit(s)*
- WGSS 180 - Individual Studies 1-4 *unit(s)*
- WGSS 190 - Internship 1-4 *unit(s)*

University Electives (37 units)

A minor is strongly recommended.

Total Units Required (120 units)

Undergraduate Minor(s)

African American Studies Minor

The African American Studies minor consists of 18 semester units with courses emphasizing the humanities and social sciences. The interdepartmental structure of this minor will enable students, while pursuing degrees in specific disciplines, to interface more efficiently with African Americans and other persons of African racial and ethnic heritage.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Required Courses (9 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)
- AFAM 22 - The Humanities in African American Culture 3 *unit(s)* (F) OR AFAM 25 - The Changing Majority: Power and Ethnicity in America (F)

Upper Division Electives (9 units)

Chosen to complement the major. At least 3 units must have the AFAM prefix (see department Chair or minor advisor for specific information).

Total Units Required (18 units)

African Studies Minor

The Minor in African Studies is offered by the Department of African American Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Core Courses (6 units)

- AFAM 40 - African Origins 3 *unit(s)*
- AFAM 111 - African Nations: History, Politics, and Culture 3 *unit(s)*

Elective Courses (9 units)

Complete nine units from:

- AFAM 112 - Black Immigrant Communities 3 *unit(s)*
- AFAM 119 - Africana Philosophy and Culture 3 *unit(s)*
- ENGL 123B - Literatures of Africa 3 *unit(s)* (V)

- POLS 142 - African Politics 4 *unit(s)*
- Other courses in consultation with advisor

Total Units Required (15 units)

Anthropology Minor

The Department of Anthropology offers an anthropology minor, which complements any career in which understanding human behavior is important. It is especially relevant to business majors and pre-professional students preparing for careers in law, medicine, or social work. Anthropology minors learn many useful skills including cultural competency, critical thinking, research design, and professional writing skills that are increasing in demand in private-public, and non-profit organizations. Many students minor in anthropology simply because they find that learning about the human species is interesting and enjoyable.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- Four upper division anthropology electives (advisor consultation available) 12 *unit(s)*

Complete Two Courses From:

- ANTH 11 - Cultural Anthropology 3 *unit(s)* (D)
- ANTH 12 - Introduction to Human Evolution 3 *unit(s)* (B2)
- ANTH 13 - Archaeology 3 *unit(s)* (A3)

Total Units Required (18 units)

Applied Research Methods Minor

The interdisciplinary Minor in Applied Research Methods (ARM), offered by the Department of Political Science, is designed to prepare students for careers involving social research and data analysis. The ARM Minor provides students with a broad understanding of research methods, including both quantitative and qualitative approaches and techniques such as surveys, experiments, interviews, focus groups, ethnography, and content analysis. Students in the ARM Minor will learn to apply these research skills to socially relevant issues, combining theoretical background with hands-on skills practice. The ARM Minor provides an ideal complement to the programs of students from a variety of social sciences, business, and applied sciences and arts disciplines.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the

coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (3 units)

Introductory Statistics (3 units)

Complete one course from:

- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)
- PH 67 - Introductory Health Statistics 3 *unit(s)* (B4)
- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)* (B4)
- SOCI 15 - Statistical Applications in the Social Sciences 3 *unit(s)* (B4)
- UNVS 15 - Statway: Statistics-Concepts & Methods 3 *unit(s)* (B4) (Or other introductory statistics course approved by Minor Coordinator)

Minor Requirements (12-16 units)

Intermediate Statistics (3-4 units)

Complete one course from:

- ECON 103A - Introduction to Econometrics and Research Methods 4 *unit(s)*
- MATH 161A - Applied Probability and Statistics I 3 *unit(s)*
- STAT 115 - Intermediate Statistics 3 *unit(s)*

Quantitative Methods (3-4 units)

Complete one course from:

- COMM 155I - Quantitative Communication Inquiry 4 *unit(s)*
- ECON 108 - Cost-Benefit Analysis 4 *unit(s)*
- JS 114 - Research Methods in Justice Studies 3 *unit(s)*
- MATH 161B - Applied Probability and Statistics II 3 *unit(s)*
- POLS 100M - Political Inquiry 4 *unit(s)*
- PSYC 117 - Psychological Tests and Measures 3 *unit(s)*
- SOCI 104 - Quantitative Research Methods 3 *unit(s)*

Qualitative Methods (3-4 units)

Complete one course from:

- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- COMM 156I - Observation and Interviewing Methods 4 *unit(s)*
- COMM 111P - Interviewing 4 *unit(s)*
- COMM 121P - Performance as Practice 4 *unit(s)*
- COMM 150I - Inquiry in Organizational Communication 4 *unit(s)*
- COMM 151I - New Media/New Methods 4 *unit(s)*
- GEOG 135 - Research Methods in Geography 3 *unit(s)*
- JS 117 - Qualitative Research Methods 3 *unit(s)*
- SOCI 105 - Qualitative Research Methods 3 *unit(s)*

Applied Research Methods Electives (3-4 units)

Complete one course from:

- ANTH 105 - Applied Anthropology 3 *unit(s)*
- ENVS 110 - Resource Analysis 4 *unit(s)*
- GEOG 70 - Introduction to Geographic Information Systems 4 *unit(s)*
- ORGS 102 - Organizations, Inquiry & Analysis 4 *unit(s)*

Total Units Required (15-19 units)

Area Studies Minor

The Minor in Area Studies, offered by the Department of History, provides an opportunity for concentrated study in the history, politics, economics, geography, or culture of one of four designated regions of the world.

With the consent of the Area Studies advisor, a student may select courses concerning aspects of one of the following regions - East and Southeast Asia, Africa and the Middle East, Latin America, or Europe (inclusive of Russia) - and global courses from a general list.

The student must complete 9 or more units in one area and 3 units in general courses. See the Area Studies advisor for details.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (12 units)

- Three courses from one of the designated regions 9 *unit(s)*
- East and Southeast Asia
- Africa and the Middle East
- Latin America
- Europe (inclusive of Russia)
- One general course 3 *unit(s)*

Total Units Required (12 units)

Asian American Studies Minor

Program Coordinator: Associate Professor Yvonne Y. Kwan

Office: DMH 213

Phone: 408-924-5258

Email: yvonne.y.kwan@sjsu.edu

The Minor in Asian American Studies (AAS) is offered by the Department of Sociology and Interdisciplinary Social Sciences. AAS is an interdisciplinary Ethnic Studies field that examines the structural and ideological forces that shape the lives of Asian Americans. AAS supports self-determination of Asian American communities through creative expressions, centering of community voices, critical pedagogies, and critical epistemologies. Social justice, equity, and activism undergird our pedagogy and scholarship.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Required Courses (9 units)

- AAS 1 - Introduction to Asian American Studies 3 *unit(s)* (F)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+with AAS 33A, US123)
- AAS 175 - Asian American Communities 3 *unit(s)* (S)

Additional Course (3 units)

Complete one course from:

- AAS 184 - Ethnic Studies Theory 3 *unit(s)*
- AAS 185 - Ethnic Studies Methodologies 3 *unit(s)*

Electives (3 units)

Complete one course from:

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)*
- AAS 125 - Filipino Experience in the United States 3 *unit(s)*
- AAS 158 - Asian American Intersections 3 *unit(s)*
- AAS 159 - Asian American Media Representation and Popular Culture 3 *unit(s)*
- AAS 170 - Special Topics in Asian American Studies 3 *unit(s)*
- AAS 180 - Individual Studies 1-4 *unit(s)*
- AAS 184 - Ethnic Studies Theory 3 *unit(s)*
- AAS 185 - Ethnic Studies Methodologies 3 *unit(s)*
- AAS 186 - Southeast Asian Diaspora in the US 3 *unit(s)*
- AAS 190 - Internship 1-4 *unit(s)*
- AAS 192 - History of Japanese Americans 3 *unit(s)*

Total Units Required (15 units)

Black Women's Studies Minor

The Department of African American Studies is committed to providing students with critical and multidimensional scholarship, teaching, and community service based on Black feminist ideologies and concepts. The Black Women's

Studies minor explores, examines, and engages the intellectual traditions connected to the cultural, historical, philosophical, and social perspectives of the lived experience at the nexus of Blackness and womanhood; topics covered within the minor are interdisciplinary in nature. The minor emphasizes the significance of understanding power and political structures of power through the intersections of race and womanhood. Students will acquire skills in critical thinking, cultivation of dialogue, research development, and contribution to social change based on Black feminist ideologies and concepts. The coursework in the minor focuses on integrating academic and experiential scholarship, teaching, and learning.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Core Courses (9 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)
- AFAM 152 - Black Feminisms 3 *unit(s)* (S)

Elective Courses (6 units)

Complete six units from the list below or select another course in consultation with an advisor:

- AFAM 156 - Black Women's Writing 3 *unit(s)*
- AFAM 166 - Black Women's Histories 3 *unit(s)*
- COMM 176P - Communication and Gender 4 *unit(s)*
- WGSS 20 - Women of Color in the U.S. 3 *unit(s)* (D)
- WGSS 160 - Queering Gender, Race, and Class 3 *unit(s)*

Total Units Required (15 units)

Chicana and Chicano Studies Minor

The Department of Chicana and Chicano Studies offers a minor that is a unique interdisciplinary program of study that supplements any undergraduate major by providing a well-rounded introduction to the Chicana-Latinx community, including its historical, cultural, social, political, and economic context. Coursework supports major programs in economics, business, politics, culture, education, personnel management, marketing, psychology/counseling, community development, public administration, and fine arts.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Complete eighteen units from:

No more than 3 lower-division courses may be counted towards the 18 units. It is possible to complete the minor with only Upper Division courses.

Must complete the entire CCS 10A and CCS 10B sequence to meet the American Institutions requirement.

Substitute courses approved by the undergraduate advisor or Chair

- CCS 1 - Introduction to Chicana and Chicano Studies 3 unit(s)
- CCS 2 - Library Studies 1 unit(s)
- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 unit(s) (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 unit(s) (D+US123)
- CCS 25 - The Changing Majority: Power and Ethnicity in America 3 unit(s) (F)
- CCS 30 - Race and Ethnicity in Public Space 3 unit(s) (F)
- CCS 40 - Chicana/o Theater: Social Justice Performance Art 3 unit(s)
- CCS 74 - Public Address 3 unit(s) (A1)
- CCS 115 - Chicana/o Families 3 unit(s)
- CCS 120 - Political Economy and Chicana/o Communities 3 unit(s)
- CCS 125 - Chicana/o Community Studies 3 unit(s)
- CCS 127 - Chicanas/os and the Criminal Justice System 3 unit(s)
- CCS 130 - Chicanas and Chicanos in American Society 3 unit(s) (S)
- CCS 135 - Contemporary Chicana/o Issues 3 unit(s)
- CCS 144 - Chicana/o Literature 3 unit(s)
- CCS 147 - Music in Mexican America 3 unit(s)
- CCS 150 - Research Methods 3 unit(s)
- CCS 151 - Theory in Chicana/o Studies 3 unit(s)
- CCS 160 - Gender and Sexuality in the Chicana/o Community 3 unit(s) (S)
- CCS 170 - Chicana/Chicano Film 3 unit(s)
- CCS 175 - Human Migrations: Global Reach 3 unit(s)
- CCS 180 - Individual Studies 1-4 unit(s)
- CCS 185 - Teaching in a Diverse Society 3 unit(s)

Total Units Required (18 units)

Communication in the Information Age Minor

This interdisciplinary minor in Communication in the Information Age, offered by the Department of Communication Studies, provides students the theoretical insights and practical skills necessary to thrive in the information age. The curriculum teaches the basic skills of information retrieval and evaluation; provides insight into contemporary media practices; and explores the intersection of technology, identity, and culture. Completion of this minor means that you can:

- Employ a broad range of resources and information technologies of effective personal, artistic, and professional communication.
- Practice effective principles of information gathering, evaluation, and synthesis while demonstrating awareness of legal, ethical, and practical issues relating to these practices.

- Develop reasoned and well articulated perspectives on contemporary questions related to rights and responsibilities in the information age, with particular awareness of issues related to equity, intellectual property, intellectual freedom, and the ethical responsibilities of media institutions.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Minor Core (7 units)

- MCOM 72 - Mass Communication and Society 3 *unit(s)* (D)
- COMM 181F - New Media/New World 4 *unit(s)*

Electives (11 units)

Complete eleven units from:

- ARTH 72 - Design in Society 3 *unit(s)* (C1)
- ARTH 176A - Graphic Design History and Theory 3 *unit(s)*
- COMM 131P - New Media/You Media 4 *unit(s)*
- COMM 151I - New Media/New Methods 4 *unit(s)*
- RTVF 110 - Media and Culture 3 *unit(s)* (S)

Total Units Required (18 units)

Communication Studies Minor

The minor in Communication Studies complements any major. Whatever your career path, you will need excellent communication skills to succeed.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Students complete 18 units in Communication Studies for the minor; at least 12 of the 18 units must be upper division.

Students can take up to 3 units of the following classes towards their minor.

- COMM 80 - Communication Workshop 1 unit(s) (only 1 unit may count toward minor)
- COMM 91A - Activity Project in Forensics: Intramural Debate 1 unit(s)
- COMM 91J - Judge Training 1 unit(s) (only 1 unit may count toward minor)
- COMM 180 - Individual Studies 1-3 unit(s)
- COMM 184 - Directed Reading 1-2 unit(s)
- COMM 190 - Activity Projects in Speech 1-6 unit(s)
- COMM 190I - Activity Proj in Speech International 1-6 unit(s)
- COMM 191A - Activity Projects in Forensics 1-3 unit(s)
- COMM 191B - Activity Projects in Forensics 1-3 unit(s)
- COMM 191C - Activity Projects in Forensics 1-3 unit(s)
- COMM 191J - Activity Projects in Forensics 1 unit(s)
- COMM 191M - Activity Projects in Forensics 1 unit(s)
- COMM 193 - Activity Projects in Intercultural/International Communication 1-3 unit(s)
- COMM 195 - Special Topics in Communication Studies 1-3 unit(s)

Total Units Required (18 units)

Comparative U.S. Race and Ethnic Relations Minor

The Comparative U.S. Race and Ethnic Relations (CRER) Minor, offered by the Department of African American Studies, is a multi- and interdisciplinary program that examines the historical, cultural, and social formations of power and inequality in the United States. In addition to its emphasis on the comparative histories and experiential knowledge of marginalized racial and ethnic groups in the U.S., including but not limited to Native Americans, Black and African Americans, Latinxs, and Asian Pacific Islander Desi/Americans, this program employs a complex intersectional lens to address issues of social justice, discrimination, settler colonialism, immigration, and racialization.

Advisors

African American Studies: Dr. Wendy Thompson

Sociology and Interdisciplinary Social Sciences (representing Women, Gender, and Sexuality Studies and Asian American Studies): Dr. Yvonne Y. Kwan

Sociology and Interdisciplinary Social Sciences (representing Native American Studies): Dr. Kerri J. Malloy

Chicana and Chicano Studies: Dr. Jonathon Gomez

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Core Course (3 units)

- AFAM 25 - The Changing Majority: Power and Ethnicity in America 3 unit(s)
or
- CCS 25 - The Changing Majority: Power and Ethnicity in America 3 unit(s)

Elective Courses (12 units)

Complete four additional courses in consultation with a CRER minor advisor (via AFAM). Minor advisors will also be available in each of the other contributing departments (i.e., AAS/SOCI/WGSS, ANTH, and CCS) to assist with advising—especially as it pertains to the department/program-specific courses.

No more than two courses from a single ethnic group or program may be selected.

- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)*
- AAS 125 - Filipino Experience in the United States 3 *unit(s)*
- AAS 175 - Asian American Communities 3 *unit(s)*
- AFAM 105 - Race and Health Inequities in the US 3 *unit(s)*
- AFAM 106 - Black Diasporas 3 *unit(s)*
- AFAM 110 - Race and Education in the US 3 *unit(s)*
- AFAM 112 - Black Immigrant Communities 3 *unit(s)*
- AFAM 120 - Sociology of Black Communities 3 *unit(s)*
- AFAM 125 - Black Kinship in the US - Black Families Past and Present 3 *unit(s)*
- AFAM 130 - Black Perspectives in Psychology - Black Psychology 3 *unit(s)*
- AFAM 134 - The Black Civil Rights Movements 3 *unit(s)*
- AFAM 137 - Introduction to Black Religion 3 *unit(s)*
- AFAM 142 - Race, Justice, and the Legal System 3 *unit(s)*
- AFAM 151 - Race, Class and the Environment 3 *unit(s)* (R)
- ANTH 175 - Anthropology of Native America 3 *unit(s)*
- ANTH 176 - Native California: Past and Present 3 *unit(s)*
- CCS 105 - Chicanos: United States/Mexico Relations 3 *unit(s)*
- CCS 115 - Chicana/o Families 3 *unit(s)*
- CCS 120 - Political Economy and Chicana/o Communities 3 *unit(s)*
- CCS 125 - Chicana/o Community Studies 3 *unit(s)*
- CCS 127 - Chicanas/os and the Criminal Justice System 3 *unit(s)*
- CCS 130 - Chicanas and Chicanos in American Society 3 *unit(s)*
- CCS 135 - Contemporary Chicana/o Issues 3 *unit(s)*
- CCS 144 - Chicana/o Literature 3 *unit(s)*
- CCS 152 - The Story of Chicano Spanish 3 *unit(s)*
- CCS 160 - Gender and Sexuality in the Chicana/o Community 3 *unit(s)*
- CCS 170 - Chicana/Chicano Film 3 *unit(s)*
- CCS 175 - Human Migrations: Global Reach 3 *unit(s)*
- CCS 185 - Teaching in a Diverse Society 3 *unit(s)*
- SOCI 142 - Critical Native American Studies 3 *unit(s)*
- WGSS 20 - Women of Color in the U.S. 3 *unit(s)*
- WGSS 112 - Women in the Global Economy 3 *unit(s)*
- WGSS 114 - Politics of Mothering and Reproduction 3 *unit(s)*
- WGSS 160 - Queering Gender, Race, and Class 3 *unit(s)*

Total Units Required (15 units)

Economics Minor

The Minor in Economics is offered by the Department of Economics. Students from many majors find a minor in economics to be a useful complement to their main area of study.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Lower Division Courses (6 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s) (D)*

Upper Division Courses (12 units)

The department recommends that a minimum of 12 units of upper division in the minor be taken in residence.

Total Units Required (18 units)

Environmental Impact Assessment Minor

The Minor in Environmental Impact Assessment is offered by the Department of Environmental Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (24 units)

- ENVS 10 - Life on a Changing Planet 3 *unit(s) (B2)*
- ENVS 124 - Introduction to Environmental Law 3 *unit(s)*
- ENVS 151 - Race, Class and the Environment 3 *unit(s) (R)*
- ENVS 185 - Environmental Impact Analysis 4 *unit(s)*
- ENVS 190 - Advanced Environmental Impact Assessment 4 *unit(s)*

Complete one course:

- ENVS 119 - Energy and the Environment 3 *unit(s) (R)*
- ENVS 128 - Water Resource Management 3 *unit(s)*
- ENVS 129 - Water Policy in the Western U.S. 3 *unit(s)*

Complete one course:

- ENVS 144 - California Wetland Controversies 4 *unit(s)*
- ENVS 161 - California Wildlands 4 *unit(s)*
- ENVS 173 - Forest Ecology and Conservation 4 *unit(s)*
- ENVS 187 - Environmental Restoration 4 *unit(s)*
- ENVS 270 - Field Studies in Water Resource Management 4 *unit(s)*

Total Units Required (24 units)

Environmental Justice Minor

The Minor in Environmental Justice is offered by the Department of Environmental Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- ENVS 127 - Community-Based Participatory Research 3 *unit(s)*
- ENVS 150 - Introduction to Environmental Thought 3 *unit(s)* (S)
- ENVS 151 - Race, Class and the Environment 3 *unit(s)* (R)

Complete one course:

- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- AFAM 25 - The Changing Majority: Power and Ethnicity in America 3 *unit(s)* (D)

Complete one course:

- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- ENVS 122 - Borderlands and the Environment 3 *unit(s)*
- ENVS 124 - Introduction to Environmental Law 3 *unit(s)*
- ENVS 129 - Water Policy in the Western U.S. 3 *unit(s)*
- ENVS 140 - Politics and the Environment 3 *unit(s)*
- ENVS 159 - Nature and World Cultures 3 *unit(s)* (V)

Complete one course:

- AFAM 130 - Black Perspectives in Psychology - Black Psychology 3 *unit(s)*
- AFAM 133 - Introduction to Social Issues in Planning 4 *unit(s)*
- AFAM 142 - Race, Justice, and the Legal System 3 *unit(s)*
- AFAM 145 - Race, Policy, and Urban Cities 4 *unit(s)*
- AFAM 159 - The Racial Wealth Gap in America 3 *unit(s)* (S)
- AFAM 160 - Black Political Power in the US 3 *unit(s)*

Total Units Required (18 units)

Environmental Restoration Minor

The Minor in Environmental Restoration Minor is offered by the Department of Environmental Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (24 units)

- BIOL 30 - Principles of Biology I 4 *unit(s)* (B2B3)
- ENVS 144 - California Wetland Controversies 4 *unit(s)*
- ENVS 154 - Sustainable Agriculture 4 *unit(s)*
- ENVS 173 - Forest Ecology and Conservation 4 *unit(s)*
- ENVS 187 - Environmental Restoration 4 *unit(s)*
- ENVS 191 - Advanced Environmental Restoration 4 *unit(s)*

Total Units Required (24 units)

Environmental Studies Minor

The Minor in Environmental Studies is offered by the Department of Environmental Studies for students who are not majoring with a BA or BS in Environmental Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (19 units)

- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- ENVS 124 - Introduction to Environmental Law 3 *unit(s)*
- ENVS 185 - Environmental Impact Analysis 4 *unit(s)*
- Two Advisor-approved electives 6 *unit(s)*

Complete One Course From:

- ENVS 107 - Introduction to Environmental Economics and Policy 4 *unit(s)*

- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)

Total Units Required (19 units)

Forensic Studies Minor

The Minor in Forensic Studies, offered by the Department of Justice Studies, will appeal to students in majors across the university and has practical applications in the areas of law, law enforcement, engineering, computer science, accounting, chemistry, biology, nursing, medicine, and anthropology.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirement (15 units)

Required Courses (9 units)

- FS 11 - Survey of Forensic Science 3 *unit(s)*
- FS 161 - Crime Scene Investigation 3 *unit(s)*
- FS 162 - Forensic Science Applications 3 *unit(s)*

Additional Courses (6 units)

ANY UPPER-DIVISION FORENSIC SCIENCE COURSE may be used as an elective, or any course from the list below. Other courses not on this list may be utilized with approval from the Minor Coordinator.

- ANTH 157 - Forensic Anthropology 3 *unit(s)*
- JS 143 - Criminal Evidence and Procedure 3 *unit(s)*
- PHIL 133 - Ethics in Science 3 *unit(s)* (V)
- PHIL 160 - Philosophy of Science 3 *unit(s)* (R)
- PHOT 110 - Black and White Photography 3 *unit(s)*
- PSYC 110 - Adult Psychopathology 3 *unit(s)*
- PSYC 129 - Neuroscience 3 *unit(s)*
- PSYC 153 - Psychology in the Courtroom 3 *unit(s)*

Total Units Required (15 units)

Geographic Information Science Minor

The Minor in Geographic Information Science, offered by the Department of Urban and Regional Planning enables students interested in Geographic Information Science to include that experience in their undergraduate programs.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (14 units)

- GEOG 70 - Introduction to Geographic Information Systems 4 *unit(s)*
- GEOG 171 - Advanced Geographic Information Systems 4 *unit(s)*

Elective Courses (minimum of 6 units)

Students must complete two GIS technology courses.

- GEOG 107 - Mapping the World 3 *unit(s)*
- GEOG 172 - Cartography and Data Visualization 3 *unit(s)*
- GEOG 173 - Drones and Spatial Data Collection 3 *unit(s)*
- GEOG 178 - Participatory GIS 3 *unit(s)*
- GEOG 181 - Introduction to Remote Sensing 3 *unit(s)*
- GEOG 182 - Programming for GIS 3 *unit(s)*
- GEOG 195 - Open Source GIS 3 *unit(s)*
- URBP 148 - Introduction to Spatial Visualization Technology in Urban Planning 1-4 *unit(s)*

Total Units Required (14 units)

Geography Minor

The Minor in Geography, offered by the Department of Urban and Regional Planning, enables students interested in the broader field of Geography to include that experience in their undergraduate programs.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (13 units)

Required Courses (10 units)

- GEOG 1 - Physical Geography 3 *unit(s)* (B1)
- GEOG 70 - Introduction to Geographic Information Systems 4 *unit(s)*

Complete One Course From:

- GEOG 10 - Cultural Geography 3 *unit(s)* (D)
- GEOG 12 - World Regional Geography 3 *unit(s)* (D)

Elective Courses (3 units)

Students must complete one course from a Geography subdiscipline.

- GEOG 105 - Urban Geography 3 *unit(s)*
- GEOG 107 - Mapping the World 3 *unit(s)*
- GEOG 110 - Urbanization in the Global South 3 *unit(s)*
- GEOG 112 - Nations, Cultures & Globalization 3 *unit(s)*
- GEOG 113 - Global Cities 3 *unit(s)*
- GEOG 115 - Global Development 3 *unit(s)*
- GEOG 121 - Population and Global Change 3 *unit(s)*
- GEOG 124 - Special Topics in Geography 3 *unit(s)*
- GEOG 130 - Natural Resources 3 *unit(s)*
- GEOG 140 - The United States 3 *unit(s)*

Total Units Required (13 units)

Global Studies Minor

SJSU's Department of Environmental Studies offers the Minor in Global Studies as an interdisciplinary program that encourages students to look at the world holistically. The tremendous international migration of people, movements of goods, technology transfers, and mixing of cultures makes it important to study the world as a human community in ways we haven't considered in the past. The program is designed to train future leaders to grapple with some of the most pressing issues of our time, from a global perspective. The focus of our program on studying global issues from multiple perspectives provides students the intellectual foundation and the analytical and communication skills to prepare for careers in government, education, NGOs, international development agencies, international philanthropic organizations, law, consulting, global health organizations, writing, and graduate study. We are the only Global Studies program in the San Francisco Bay Area and one of the few in the CSU system that offers an interdisciplinary program that includes a suite of core courses in Global Studies. Global Studies is a relatively new field and our program is at the leading edge of shaping this field for the future.

Students may complete a minor in Global Studies by completing 15 units of lower and upper-division core coursework in Global Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Complete One Course From:

- GLST 1A - Introduction to Global Studies 3 *unit(s)*

- GLST 1B - Introduction to Global Studies 3 *unit(s)* (B2)

Complete One Course From:

- GLST 188 - Special Topics in International Experiences 3 *unit(s)* (V)
- GLST 189 - Global Experience 1-3 *unit(s)*

Complete Three Courses From:

- GLST 143 - Gender, Power, Intl Dev 3 *unit(s)* (V)
- GLST 156 - Technology of the Modern World 3 *unit(s)*
- GLST 162 - Contemporary Global Issues 3 *unit(s)*
- GLST 164 - Advanced Seminar in Global Citizenship 3 *unit(s)*
- GLST 167 - Changing Ecologies of Globalization 3 *unit(s)* (R)

Total Units Required (15 units)

History Minor

The History Minor is offered by the Department of History.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Lower Division Course(s)

Complete 3-6 lower division units (HIST 1 - HIST 99).

Upper Division Courses

Complete 12-15 upper division units (HIST 100 - HIST 199), except for HIST 170S.

Total Units Required (18 units)

Human Rights Minor

The Minor in Human Rights, offered by the Department of Justice Studies, is meant to prepare students for careers in relation to international law, human rights advocacy/reporting/organizing, and human rights scholarship. The Minor can supplement the program of students who have interests in (for example) social problems, public policy, social

movements and social change, international relations/studies, law and governance, issues of justice, and global cultures.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Required Courses (9 units)

- JS 25 - Introduction to Human Rights and Justice 3 *unit(s)* (D)
- JS 179 - Human Rights Practicum and Seminar 3 *unit(s)*

Complete One Course From:

- JS 171 - Human Rights and Justice 3 *unit(s)* (V)
- SOCI 118 - Sociology of Human Rights and Social Justice 3 *unit(s)*

Additional Courses (6 units)

Choose two courses from different departments. Substantive Electives are revised each Fall semester.

Complete two courses from:

- AAS 175 - Asian American Communities 3 *unit(s)* (S)
- AFAM 120 - Sociology of Black Communities 3 *unit(s)*
- AFAM 134 - The Black Civil Rights Movements 3 *unit(s)*
- AFAM 151 - Race, Class and the Environment 3 *unit(s)* (R)
- AFAM 159 - The Racial Wealth Gap in America 3 *unit(s)* (S)
- ANTH 115 - The Emerging Global Culture 3 *unit(s)* (V)
- ANTH 140 - Human Sexuality 3 *unit(s)* (S)
- ANTH 146 - Culture and Conflict 3 *unit(s)* (V)
- COMM 157SL - Community Action/Community Service 3 *unit(s)* (S)
- COMM 174 - Intercultural Comm and Structural Inequalities 3 *unit(s)* (S)
- ECON 112 - Economic Development 4 *unit(s)*
- ENGL 117B - Global Film, Literature, and Cultures 3 *unit(s)* (V)
- ENGL 122 - Topics in Comparative World Literature 4 *unit(s)*
- ENGL 126 - Holocaust Literature 3 *unit(s)* (V)
- ENGL 165 - Black American Literatures 4 *unit(s)*
- ENGL 169 - Ethnicity in American Literature 3 *unit(s)* (S)
- ENVS 105 - Environmental Change and Problems, San Francisco Bay Area 3 *unit(s)*
- ENVS 107 - Introduction to Environmental Economics and Policy 4 *unit(s)*
- ENVS 117 - Human Ecology 3 *unit(s)*
- ENVS 140 - Politics and the Environment 3 *unit(s)*

- ENVS 152 - Globalization and the Environment 3 *unit(s)* (R)
- ENVS 159 - Nature and World Cultures 3 *unit(s)* (V)
- GEOG 112 - Nations, Cultures & Globalization 3 *unit(s)* (V)
- GEOG 115 - Global Development 3 *unit(s)*
- GLST 162 - Contemporary Global Issues 3 *unit(s)*
- GLST 164 - Advanced Seminar in Global Citizenship 3 *unit(s)*
- GLST 167 - Changing Ecologies of Globalization 3 *unit(s)* (R)
- HIST 188 - History of Women in the United States 3 *unit(s)* (S)
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)
- HUM 122 - Topics in Comparative World Literature 4 *unit(s)*
- HUM 126 - Holocaust Literature 3 *unit(s)* (V)
- JS 122 - Drugs and Society 3 *unit(s)*
- JS 127 - Immigration and Justice 3 *unit(s)*
- JS 129 - International Crime and Deviance 3 *unit(s)*
- JS 132 - Race, Gender, Inequality and the Law 3 *unit(s)* (S)
- JS 172 - Human Trafficking and Modern Day Slavery 3 *unit(s)*
- JS 173 - Advancing Human Rights Through Diversity, Equity and Inclusion 3 *unit(s)*
- CCS 105 - Chicanos: United States/Mexico Relations 3 *unit(s)*
- CCS 120 - Political Economy and Chicana/o Communities 3 *unit(s)*
- CCS 130 - Chicanas and Chicanos in American Society 3 *unit(s)* (S)
- CCS 175 - Human Migrations: Global Reach 3 *unit(s)*
- FS 170 - Forensic Science in Human Rights Investigations 3 *unit(s)*
- MCOM 106 - Global Mass Communication 3 *unit(s)*
- MDES 144 - Middle Eastern Politics 4 *unit(s)*
- MDES 156 - Islam, Politics and the West 3 *unit(s)*
- METR 168A - Climate Action and Leadership I 6 *unit(s)*
- METR 168B - Climate Action and Leadership II 3 *unit(s)* (R+S+V)
- METR 174 - Climate Change Capstone 3 *unit(s)*
- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- PHIL 122 - Social Justice 3 *unit(s)*
- PHIL 126 - Environmental Ethics and Philosophy 3 *unit(s)*
- POLS 130 - American Public Policy 4 *unit(s)*
- POLS 135 - U.S. Environmental Policy 3 *unit(s)*
- POLS 147 - Globalization 4 *unit(s)*
- POLS 150 - War and Peace 3 *unit(s)* (V)
- POLS 152A - International Organizations and NGOs 4 *unit(s)*
- POLS 152B - Model United Nations 4 *unit(s)*
- POLS 154 - U.S. Foreign Policy: Formulation and Administration 4 *unit(s)*
- POLS 155 - The Wealth of Nations 4 *unit(s)*
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (USV)
- PSYC 145 - Community Mental Health 3 *unit(s)*
- PSYC 191 - The Psychology of Prejudice 3 *unit(s)* (S)
- SOCI 116 - Global Society 3 *unit(s)*
- SOCI 118 - Sociology of Human Rights and Social Justice 3 *unit(s)*
- SOCI 120 - Contemporary Social Issues 3 *unit(s)*
- SOCI 141 - Environmental Sociology 3 *unit(s)*
- SOCI 160 - Immigration and Identity 3 *unit(s)*
- SOCI 162 - Race and Ethnic Relations 3 *unit(s)* (S)
- SOCI 164 - Social Action 3 *unit(s)*
- SOCI 165 - Poverty, Wealth and Privilege 3 *unit(s)*
- SOCI 172 - Lesbian, Gay, Bi, Transgender Studies 3 *unit(s)*

- SOCS 137 - California History for Teachers 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)* (S)
- SOCS 139 - World History for Teachers 3 *unit(s)* (V)
- WGSS 101 - Sex, Power, and Politics 3 *unit(s)* (S)
- WGSS 112 - Women in the Global Economy 3 *unit(s)*
- WGSS 160 - Queering Gender, Race, and Class 3 *unit(s)*

Total Units Required (15 units)

Human Systems Integration Minor

The Human Systems Integration (HSI) Minor: (1) studies the cognitive, perceptual, and performance capabilities and limitations of people as they interact with sociotechnical systems and devices (e.g., energy and transportation systems, computers, mobile devices, workplaces); and (2) seeks to apply evidence-based principles in the development of human-centered systems and devices. The HSI Minor, offered by the Department of Psychology, aims to provide students with interdisciplinary training to prepare them to work in cross-functional teams to optimize human capabilities, increase system efficiency, reliability, and safety, and minimize error.

At least 12 units outside of preparation for the minor must be separate and distinct from the units used for the major program of the student. See a departmental advisor for approval of courses. Visit the Psychology Department Advising website for more information.

It is permissible for Psychology Majors to have a minor in Human Systems Integration.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (6 units)

- PSYC 1 - Introduction to Psychology 3 *unit(s)* (D)

Statistics Course

Complete one course:

- PH 67 - Introductory Health Statistics 3 *unit(s)* (B4)
- SOCI 15 - Statistical Applications in the Social Sciences 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4)
- UNVS 15 - Statway: Statistics-Concepts & Methods 3 *unit(s)* (B4)
- BUS2 90 - Business Statistics 3 *unit(s)*

Required Courses (9 units)

- PSYC 173 - Human Factors 3 *unit(s)*

Complete Two Courses From:

- PSYC 135 - Cognition 3 *unit(s)*
- PSYC 155 - Human Learning 3 *unit(s)*
- PSYC 158 - Perception 3 *unit(s)*

Minor Electives (6-8 units)

Complete at least two courses from:

- ART 108 - Introduction to Game Studies 3 *unit(s)*
- AVIA 2 - Private Pilot Ground 3 *unit(s)*
- AVIA 73 - Air Traffic Control 3 *unit(s)*
- AVIA 141 - Human Factors in Aviation 3 *unit(s)*
- BUS2 130 - Introduction to Marketing 3 *unit(s)*
- BUS4 92 - Introduction to Business Programming 3 *unit(s)*
- BUS4 111 - Networking and Data Communications 3 *unit(s)*
- CS 46A - Introduction to Programming 4 *unit(s)*
- CS 46B - Introduction to Data Structures 4 *unit(s)*
- DSID 121 - Industrial Design Process 3 *unit(s)*
- ENGR 120 - Programming Concepts for Behavioral and Social Science Applications 3 *unit(s)*
- ISE 164 - Computer and Human Interaction 3 *unit(s)*
- ISE 114 - Safety Engineering 3 *unit(s)*
- PSYC 136 - Cognitive Science 3 *unit(s)*
- PSYC 170 - Industrial and Organizational Psychology 3 *unit(s)*
- STAT 115 - Intermediate Statistics 3 *unit(s)*

Total Units Required (21-23 units)

Jewish Studies Minor

In the Jewish Studies Program, offered by the Department of History, students learn about Jewish ethnicity, history, literature, languages, ethics, religion, and music, exploring the diverse experiences and challenges of Jews in the United States and across the Jewish diaspora, including Israel and the wider Middle East, Europe, and Latin America. The program encourages awareness of minority perspectives, critical and interdisciplinary thinking, and exploration of cross-cultural relations. As is true with any good learning, the minor seeks to enable students to make the leap from knowledge to commitment and action. To that end, the program encourages students to engage in deeper Jewish-focused research and/or service-oriented fieldwork. The interdisciplinary minor includes courses offered by departments within the College of Humanities and the Arts and the College of Social Sciences, and helps to prepare students for graduate education (in history, English, international relations, religious studies, philosophy, world languages, etc.), as well as professional training and careers (teaching, law, public sector service and advocacy, foreign service and diplomacy, museums, religious organizations, creative fields, etc.). Scholarships are awarded each semester to outstanding students enrolled in the Jewish studies minor program.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

To allow students their greatest flexibility, the minor has no courses specifically required. Minor credit will be earned for the student's significant research and focus on Jewish aspects of each course; students should consult with the Jewish Studies coordinator to confirm this significant focus.

Minor Requirements (15 units)

Select 15 units from the courses below, with the following caveat:

No more than three Hebrew classes may be counted toward the minor.

For courses not primarily about Jewish issues, the student's own focus on Jewish issues in research/writing will determine whether the course qualifies for Jewish Studies minor credit, subject to approval by the Jewish Studies coordinator.

Additional courses will be approved for the minor by the Jewish Studies coordinator, based on individual instructors' syllabi (for course numbers that vary in content).

Jewish Studies minors are encouraged to engage in service learning in at least one of their required or elective classes. Students may, if they prefer, deepen their Jewish writing/research through independent study (JWSS 180) and/or actively participate in the larger community through fieldwork (PSYC 186 or HIST 199).

- ENGL 115 - The Bible as Literature 4 *unit(s)*
- ENGL 126 - Holocaust Literature 3 *unit(s)*
- HEBR 1A - Elementary Hebrew 4 *unit(s)*
- HEBR 1B - Elementary Hebrew 4 *unit(s)*
- HEBR 15A - Intermediate Hebrew 3 *unit(s)*
- HEBR 15B - Intermediate Hebrew 3 *unit(s)*
- HEBR 102A - Advanced Hebrew 3 *unit(s)*
- HEBR 102B - Advanced Hebrew 3 *unit(s)*
- HIST 104 - Advanced Topics in Ancient History 4 *unit(s)*
- HIST 132 - Advanced Topics in World History 4 *unit(s)*
- HIST 136 - World Jewish History 3 *unit(s)*
- HIST 199 - Public History Internship 3 *unit(s)*
- JWSS 111 - Special Topics in Jewish Studies 3 *unit(s)*
- JWSS 180 - Individual Studies 1-3 *unit(s)*
- MUSC 10C - Pop and Rock in the U.S. 3 *unit(s)*
- PHIL 109 - Philosophy of Religion 3 *unit(s)*
- PSYC 186 - Psychology Field Work 1-4 *unit(s)*
- RELS 70 - Gods, Guns, Gurus, Grails-World Religion 3 *unit(s)*
- RELS 90 - Bible History and Literature 3 *unit(s)*
- RELS 99 - Death, Dying and Religions 3 *unit(s)*
- RELS 191 - Religion in America 3 *unit(s)*

Total Units Required (15 units)

Justice Studies Minor

The Minor in Justice Studies is offered by the Department of Justice Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Required Lower Division Courses (3 units)

Complete one course from:

- JS 10 - Introduction to Justice Studies 3 *unit(s)*
- JS 12 - Introduction to Legal Studies 3 *unit(s)*
- JS 25 - Introduction to Human Rights and Justice 3 *unit(s) (D)*

Required Upper Division Courses (6 units)

Complete Two Courses From:

- JS 101 - Critical Issues and Ideas in Justice 3 *unit(s)*
- JS 102 - Police and Society 3 *unit(s)*
- JS 114 - Research Methods in Justice Studies 3 *unit(s)*
- JS 151 - Criminological Theory 3 *unit(s)*

Upper Division Electives (9 units)

Complete any three upper division JS courses.

Total Units Required (18 units)

Legal Studies Minor

The Minor in Legal Studies is offered by the Department of Justice Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18-22 units)

- POLS 120 - Law and Society 3 *unit(s) (S)*

Additional Courses (15-19 units)

Take No More Than One Course From Each Area Below.

Perspectives in Law

- ECON 141 - Law and Economics 4 *unit(s)*
- ENVS 124 - Introduction to Environmental Law 3 *unit(s)* (Can also be taken as POLS 124)
- JS 144 - Criminal Law 3 *unit(s)*
- PHIL 155 - Philosophy of Law 3 *unit(s)*

Contemporary Issues in Law and Justice

- AFAM 142 - Race, Justice, and the Legal System 3 *unit(s)*
- CCS 127 - Chicanas/os and the Criminal Justice System 3 *unit(s)*
- JS 101 - Critical Issues and Ideas in Justice 3 *unit(s)*
- JS 122 - Drugs and Society 3 *unit(s)*
- JS 123 - Terrorism, Intelligence, and Security 3 *unit(s)*
- JS 132 - Race, Gender, Inequality and the Law 3 *unit(s)* (S)
- JS 143 - Criminal Evidence and Procedure 3 *unit(s)*
- JS 171 - Human Rights and Justice 3 *unit(s)* (V)
- JS 174 - Reproductive Justice 3 *unit(s)*
- SOCI 151 - Violence in the Family 3 *unit(s)*

Legal History

- AFAM 134 - The Black Civil Rights Movements 3 *unit(s)*
- PHIL 195 - Seminar in Philosophy of Law 3 *unit(s)*
- POLS 121A - Constitutional Law: Institutional Powers 4 *unit(s)*
- POLS 121B - Constitutional Law: Civil Liberties 4 *unit(s)*
- POLS 121C - Constitutional Law: Civil Rights 4 *unit(s)*

Law and Ethics

- BUS3 186 - Professional and Business Ethics 3 *unit(s)* (S)
- COMM 133F - Ethical Problems in Communication 4 *unit(s)*
- FS 170 - Forensic Science in Human Rights Investigations 3 *unit(s)*
- JS 141 - Record Clearance Project Representation 3 *unit(s)*
- MCOM 101 - Media Law and Ethics 3 *unit(s)*

Law and the Courts

- COMM 147P - Argumentation and Persuasion in Courts of Law 4 *unit(s)*
- JS 103 - Courts and Society 3 *unit(s)*
- JS 140 - Record Clearance Project 3 *unit(s)*
- POLS 122 - Judicial Politics 4 *unit(s)*

Total Units Required (18-22 units)

Park Ranger and Administration Minor

The Minor in Park Ranger and Administration is offered by the Department of Environmental Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (19-21 units)

Core Courses (13 units)

- ENVS 187 - Environmental Restoration 4 *unit(s)*
- Three 3-unit lower division (CSU-transferable) courses from an A.S. degree in Park Management, from West Valley College or equivalent program 9 *unit(s)*

Additional Units (6-8 units)

Complete two courses from:

- ENVS 144 - California Wetland Controversies 4 *unit(s)*
- ENVS 154 - Sustainable Agriculture 4 *unit(s)*
- ENVS 165 - National Parks 3 *unit(s)*
- ENVS 173 - Forest Ecology and Conservation 4 *unit(s)*
- ENVS 189 - Coastal Field Studies 4 *unit(s)*
- POLS 114 - Introduction to Public Administration 3 *unit(s)*

Total Units Required (19-21 units)

Political Science Minor

Students majoring in a wide variety of fields find a minor in political science interesting and useful, providing knowledge and skills that enhance their careers, improve their citizenship, and cultivate their minds. The Minor in Political Science, offered by the Department of Political Science, appeals especially to students in the other social sciences or in business, journalism, or administration of justice, although many others also use the minor to broaden their education. Political Science department advisors help students customize their programs to support their special interests. A minimum of six units must be completed in residence to satisfy the requirements for a political science minor. The minimum requirements are:

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Lower Division Courses (6 units)

Complete One Course From:

- POLS 1 - American Government 3 *unit(s)* (US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

Complete One Course From:

- POLS 2 - Introduction to Comparative Politics 3 *unit(s)* (D)
- POLS 3 - Introduction to Political Thought 3 *unit(s)* (C2)
- POLS 4 - Introduction to International Relations 3 *unit(s)* (D)

Upper Division Electives (12 units)

Twelve additional upper division units from POLS 102-POLS 199.

Total Units Required (18 units)

Psychology Minor

A Minor in Psychology, offered by the Department of Psychology, has a minimum of 18 units of PSYC and/or STAT. At least 12 of the 18 units must be upper-division (i.e., courses numbered 100+ at SJSU). At least 12 units must be separate and distinct from the units used for the major program of the student. See a departmental advisor for approval of courses.

It is not permissible for a Psychology Major to also have a minor in Psychology.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements

Lower Division Electives (0-6 units)

PSYC or STAT Prefix (may include Community College courses with a PSYC prefix that do not articulate as equivalent to any particular SJSU Psychology course)

Upper Division Electives (12-18 units)

PSYC or STAT Prefix (other courses that can also be used as upper division Psychology Elective units include: BIOL 129, ENGR 120, GERO 114, JS 161, KIN 167, PH 126, PH 145, POLS 177, SOCI 145, and WOMS 107)

Total Units Required (18 units)

Public Administration and Public Policy Minor

The Public Administration and Public Policy Minor, offered by the Department of Political Science, provides a structured introduction to the practice of government. This minor appeals especially to students who are interested in exploring careers in the public, private, or non-profit sectors that involve policy development, advocacy, and evaluation, or government relations. This minor compliments the Political Science major, as well as other majors across the social sciences, business, journalism, justice studies, social work, and many other disciplines.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Preparation (3 units)

Complete one course from:

- POLS 1 - American Government 3 *unit(s)* (US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)

Minor Requirements (15 units)

- POLS 114 - Introduction to Public Administration 3 *unit(s)*
- POLS 130 - American Public Policy 4 *unit(s)*

Complete Two Courses From:

- POLS 102 - State Government and Politics 4 *unit(s)* (US3)
- POLS 103 - Local Government and Politics 4 *unit(s)*
- POLS 121A - Constitutional Law: Institutional Powers 4 *unit(s)*
- POLS 181 - Internships 4 *unit(s)*

Total Units Required (18 units)

Sociology Minor

The Minor in Sociology, offered by the Department of Sociology and Interdisciplinary Social Sciences, complements a large number of majors including any of the social sciences, business, journalism, radio and TV, child development, justice studies, kinesiology, education, social work, and others. SOCI 1 and any other five sociology courses, at least three of which must be upper-division = 18 total semester units required for the minor.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

- SOCI 1 - Introduction to Sociology 3 *unit(s)* (D)
- Other courses approved by the minor advisor, at least three of which must be upper division*

Total Units Required (18 units)

*SOCI 120, SOCI 180, SOCI 181, SOCI 196 Experimental Courses and SOCI 199H may be applied to the major when they have direct relevance; such relevance is determined by advisor.

Sociology of Education Minor

Program Coordinator: Associate Professor Megan Thiele

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California's K-12 public school population has undergone a major demographic change in the last decade. Educational policy leaders are concerned with educational equity, graduation rates, attrition, retention, and increasingly segregated schools. Preparation for the changing landscape of K-12 education includes analyzing, assessing, and developing sound policy recommendations to ensure that public schools are meeting the needs of the diverse student population. The Sociology of Education Minor, offered by the Department of Sociology and Interdisciplinary Social Sciences, provides students with the latest research and reports on the status of education on a local, state, national, and international level.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

In the course listings below, click on the course title to view the course description. GE areas are shown in parentheses. See Course Note Abbreviations in the SJSU Catalog for definitions of codes.

Required Courses (6 units)

- SOCI 1 - Introduction to Sociology 3 *unit(s)*
- SOCI 177 - Sociology of Education 3 *unit(s)*

Minor Electives (12 units)

Complete four courses:

- SOCI 143 - Feminist Perspectives on Gender and Education 3 *unit(s)*
- SOCI 144 - Education for Liberation 3 *unit(s)*
- SOCI 147 - Education and Global Justice 3 *unit(s)*
- SOCI 148 - Current Topics and Trends in Education 3 *unit(s)*
- SOCI 162 - Race and Ethnic Relations 3 *unit(s)*
- SOCI 179 - Sociology of Higher Education 3 *unit(s)*
- CCS 185 - Teaching in a Diverse Society 3 *unit(s)*

Total Units Required (18 units)

Sustainability Minor

The minor in Sustainability offers interdisciplinary coursework that provides foundational and applied skills and knowledge in ecological soundness, social equity, and economic viability that prepare students for careers in sustainability. Elective courses are selected from a variety of academic departments to prepare students for interdisciplinary sustainability careers and meet individual students' interests. Course offerings complement most majors while providing students with a sustainability lens through which sustainability challenges and solutions can be understood and addressed. Students are encouraged to apply their sustainability knowledge and skills through an applied practicum course. The Sustainability Minor is jointly offered by the Department of Environmental Studies and Department of Geology.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements

Students should select courses from at least two different colleges.

Introduction to Sustainability

Complete one course:

- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- GEOL 5 - Sustainability, Human Development, and the Earth 3 *unit(s)* (E)

Economic Course

Complete one course:

- BUS5 167 - Managing Environmental Issues 3 *unit(s)* (Cross listed as ENVS 167)

- ENVS 107 - Introduction to Environmental Economics and Policy 4 *unit(s)* (Cross listed as ECON 107)

Environmental Course

Complete one course:

- BIOL 111 - Fire Ecology 4 *unit(s)*
- ENGR 102 - Renewable Energy Engineering 3 *unit(s)*
- ENVS 128 - Water Resource Management 3 *unit(s)*
- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- ENVS 187 - Environmental Restoration 4 *unit(s)*
- METR 12 - Global Warming: Science and Solutions 3 *unit(s)* (B1)
- METR 112 - Global Climate Changes 3 *unit(s)* (R)
- PH 172 - Contemporary Environmental Health Issues 3 *unit(s)* (R)

Social Equity Course

Complete one course:

- AFAM 151 - Race, Class and the Environment 3 *unit(s)* (Cross listed as ENVS 151)
- AMS 159 - Nature and World Cultures 3 *unit(s)* (V) Cross listed as ENVS 159/HUM 159)
- ENVS 150 - Introduction to Environmental Thought 3 *unit(s)* (S)
- SOCI 141 - Environmental Sociology 3 *unit(s)*

Practicum

Complete one course:

- ENVS 193 - Supervised Projects and Research 1-15 *unit(s)*
- Additional Elective Course 3 *unit(s)*

Elective Course

Complete one course:

- AMS 139 - Animals and Society 3 *unit(s)* (R)
- BIOL 10 - The Living World 3 *unit(s)* (B2)
- BIOL 20 - Ecological Biology 3 *unit(s)* (B2+B3)
- BIOL 110 - Biodiversity and Biopolitics 3 *unit(s)* (R)
- BIOL 150 - Field Studies in Natural History 1-2 *unit(s)* (B3)
- BUS5 167 - Managing Environmental Issues 3 *unit(s)*
- CHAD 102 - Development of Self in a Culturally Diverse Society 3 *unit(s)* (S)
- CHAD 131 - Equity, Resilience, and Risk in Public Schools 3 *unit(s)* (S)
- COMM 146F - Communication and the Environment 4 *unit(s)*
- ENGR 100W - Engineering Reports 3 *unit(s)* (R+WID)
- ENVS 117 - Human Ecology 3 *unit(s)*
- ENVS 124 - Introduction to Environmental Law 3 *unit(s)*
- ENVS 133 - Sustainable Energy Strategies 3 *unit(s)*
- ENVS 142 - Introduction to Environmental Planning 4 *unit(s)*
- ENVS 146F - Communication and the Environment 4 *unit(s)*

- ENVS 148 - Sustainable Materials Management 4 *unit(s)*
- ENVS 150 - Introduction to Environmental Thought 3 *unit(s)* (S)
- ENVS 152 - Globalization and the Environment 3 *unit(s)* (R)
- ENVS 154 - Sustainable Agriculture 4 *unit(s)*
- ENVS 167 - Managing Environmental Issues 3 *unit(s)*
- GEOL 3 - Planet Earth 3 *unit(s)* (B1)
- GEOL 150 - Field Studies in Natural History 1-2 *unit(s)* (B3)
- GLST 167 - Changing Ecologies of Globalization 3 *unit(s)* (R)
- ISE 103 - Life Cycle Engineering 3 *unit(s)*
- JS 25 - Introduction to Human Rights and Justice 3 *unit(s)* (D)
- NUFS 139 - Hunger and Environmental Nutrition 3 *unit(s)* (R)
- POLS 124 - Introduction to Environmental Law 3 *unit(s)*
- RECL 157 - Sustainable Recreation & Ecotourism 3 *unit(s)*
- URBP 142 - Introduction to Environmental Planning 4 *unit(s)*

Total Units Required (18 units)

Sustainable Energy Minor

The Minor in Sustainable Energy is offered by the Department of Environmental Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

- ENVS 116 - Solar Energy Analysis 3 *unit(s)*
- ENVS 119 - Energy and the Environment 3 *unit(s)* (R)
- ENVS 130 - Energy Policy Analysis 3 *unit(s)*
- ENVS 133 - Sustainable Energy Strategies 3 *unit(s)*

Choose One Course From:

- ENVS 132 - Solar Home Design 3 *unit(s)*
- ENVS 137 - Green Building Design Issues 3 *unit(s)*

Total Units Required (15 units)

Sustainable Water Resources Minor

The Minor in Sustainable Water Resources is offered by the Department of Environmental Studies.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (21 units)

- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- ENVS 128 - Water Resource Management 3 *unit(s)*
- ENVS 129 - Water Policy in the Western U.S. 3 *unit(s)*
- ENVS 144 - California Wetland Controversies 4 *unit(s)*
- ENVS 154 - Sustainable Agriculture 4 *unit(s)*
- ENVS 270 - Field Studies in Water Resource Management 4 *unit(s)*

Total Units Required (21 units)

Urban Studies Minor

The Minor in Urban Studies, offered by the Department of Urban and Regional Planning, is a professionally-oriented program designed to: 1) familiarize students with the social, economic, political and physical aspects of the major urban issues of our time; and 2) introduce students to basic professional skills and strategies used to improve our urban environment.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (13 units)

Required Courses (7 units)

- URBP 101 - The City 3 *unit(s)* (S)
- URBP 136 - Introduction to Land Use Planning 4 *unit(s)*

Elective Courses (6 units minimum)

Students must complete two urban studies courses. Other courses may be substituted with permission of advisor.

- URBP 110 - Urbanization in the Global South 3 *unit(s)*
- URBP 120 - Intro to Housing Economics and Policy 4 *unit(s)*
- URBP 133 - Introduction to Social Issues in Planning 4 *unit(s)*
- URBP 142 - Introduction to Environmental Planning 4 *unit(s)*
- URBP 143 - Intro Private Development and Planning 3 *unit(s)*
- URBP 148 - Introduction to Spatial Visualization Technology in Urban Planning 1-4 *unit(s)*

- URBP 150 - Introduction to Municipal Finance 4 *unit(s)*
- URBP 151 - Introduction to Urban Design 4 *unit(s)*
- URBP 152 - Introduction to Urban Design Studio 4 *unit(s)*
- URBP 156 - Introduction to Local Transportation Planning 4 *unit(s)*
- URBP 178 - Intro to Regional Transport Planning 4 *unit(s)*

Total Units Required (13 units)

Values, Technology and Society Minor

This interdisciplinary minor, offered by the Department of Anthropology, groups existing courses from a number of departments into an integrated study of the interaction of values, technology, and society as they give shape and direction to the world in which we live. In particular, the minor focuses on the increasing recognition of the need to assert human values (in particular, moral, social, aesthetic, and political values) given the accelerating development of modern technology and the associated increasing complexity and interconnectedness of our lives. Courses in the minor examine these themes as they are reflected in such issues as war and peace, the environment, health, modern science and technology, our use of computers, and the expression of values in our technological society through ethics, art, design, and religion.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (18 units)

Core Courses (9 units)

Complete One Course From:

- ANTH 11 - Cultural Anthropology 3 *unit(s)* (D)
- ANTH 13 - Archaeology 3 *unit(s)* (A3)

Complete Two Courses From:

- ANTH 132 - Creating Built Worlds 3 *unit(s)*
- ANTH 143 - Culture and Adaptation 3 *unit(s)*
- PHIL 110 - Science, Technology and Human Values 3 *unit(s)* (V)
- TECH 198 - Technology and Civilization 3 *unit(s)* (V)

Electives (9 units)

Three courses (9 units) chosen from the following approved list selected in consultation with the program advisor; one additional core course may be substituted for an elective course with advisor approval. Students are encouraged to select courses that address one of the following program foci.

Complete Three Courses From:

Students may take up to 6 units of lower division coursework in completing the minor requirements.

People and Environments

- BIOL 110 - Biodiversity and Biopolitics 3 *unit(s)* (R)
- ENVS 1 - Introduction to Environmental Issues 3 *unit(s)* (A3)
- ENVS 150 - Introduction to Environmental Thought 3 *unit(s)* (S)
- GEOL 111 - Geology and the Environment 3 *unit(s)* (R)
- METR 112 - Global Climate Changes 3 *unit(s)* (R)
- PSYC 173 - Human Factors 3 *unit(s)*

Health and Medicine

- ANTH 151 - Modernity and Disease 3 *unit(s)*
- PH 135 - Health Issues in a Multicultural Society 3 *unit(s)* (S)
- SOCI 166 - Medical Sociology 3 *unit(s)*

Technology and Social Control

- ANTH 136 - Thought Control in Contemporary Society 3 *unit(s)*
- ANTH 173 - Multimedia Anthropology 3 *unit(s)*
- ENVS 152 - Globalization and the Environment 3 *unit(s)* (R)
- RTVF 110 - Media and Culture 3 *unit(s)* (S)

Total Units Required (18 units)

Women, Gender, and Sexuality Studies Minor

Program Coordinator: Professor Tanya Bakhru
Office: DMH 213
Phone: 408-924-5744
Email: tanya.bakhru@sjsu.edu

The Women, Gender, and Sexuality Studies Program, offered by the Department of Sociology and Interdisciplinary Social Sciences at San Jose State, is committed to interdisciplinary scholarship and teaching based on global feminist frameworks. WGSS curriculum investigates how lives are shaped by gender and gender identity, race, class, sexuality, and nation. The program emphasizes the importance of understanding gender as integral to social and political structures of power. Students will obtain skills to cultivate critical thinking, cultivation of dialogue, coalition building, appreciation of diversity, and contribution to social change based on feminist frameworks. The goal of the WGSS program includes integrating the academic and experiential, thereby contributing to social change and justice.

University Graduation Requirements

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Minor Requirements (15 units)

Required Courses (12 units)

- WGSS 10 - Women, Gender, and Sexuality Studies 3 *unit(s)* (D)

Complete Nine Units:

- WGSS 20 - Women of Color in the U.S. 3 *unit(s)* (D)
- WGSS 101 - Sex, Power, and Politics 3 *unit(s)* (S)
- WGSS 102 - The Global Study of Women 3 *unit(s)* (V)
- WGSS 112 - Women in the Global Economy 3 *unit(s)*
- WGSS 114 - Politics of Mothering and Reproduction 3 *unit(s)*
- WGSS 135 - Trans Studies: Identities, Embodiment, & Politics 3 *unit(s)*
- WGSS 160 - Queering Gender, Race, and Class 3 *unit(s)*
- WGSS 169 - Sexualities and the Body 3 *unit(s)*
- WGSS 189 - Feminist Perspectives on Gender and Religion 3 *unit(s)*

Electives (3 units)

Complete one course from:

- CCS 160 - Gender and Sexuality in the Chicana/o Community 3 *unit(s)* (S)
- SOCI 172 - Lesbian, Gay, Bi, Transgender Studies 3 *unit(s)*
- SOCI 174 - Sexualities 3 *unit(s)*
- WGSS 107 - Psychology of Women 3 *unit(s)*
- WGSS 131 - Gender, Sexuality, and Religion 3 *unit(s)*
- WGSS 156 - Black Women's Writing 3 *unit(s)*
- WGSS 175 - Sociology of Masculinities and Femininities 3 *unit(s)*
- WGSS 180 - Individual Studies 1-4 *unit(s)*
- WGSS 190 - Internship 1-4 *unit(s)*

Total Units Required (15 units)

Master(s)

Applied Anthropology, MA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (36 units)
- Program Learning Outcomes

Offered by the Department of Anthropology, more information about the Masters in Applied Anthropology program and important dates can be obtained at the Anthropology department website.

Admissions Requirements

Candidates must meet all the university admission requirements. The university-level graduate application is separate from the application you send to the department. You will need to apply separately to the university to obtain approval for university-level admission and to the department to obtain admission into the Applied Anthropology Program. Minimum requirements for the program are a bachelor's degree in Anthropology or a core of introductory Cultural and Physical or Archaeological Anthropology; an upper-division methods course in Ethnography, Archaeology, or Osteology; an upper-division anthropological theory course; and 6 elective units in upper-division Anthropology (approximately 18 units overall). A 3.0 grade point average (B or better) in the last 60 semester units of undergraduate work and all Anthropology courses is required. Depending on their level of preparation, applicants can be admitted in either classified or conditionally classified standing.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage

Requirements for Advancement to Graduate Candidacy

Students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MA degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Further requirements of the department for advancement to candidacy include completion of 18 units in the graduate program and submission of a project or thesis proposal to the department's Graduate Committee. In order to advance to candidacy, all students must participate in the First Year Review in their second semester. Further information on the First Year Review is available on the program FAQ page on the Department of Anthropology website.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MA -Applied Anthropology Graduation Requirements

Each course of study must include 36 semester units. Eighteen of the units are in the Applied Anthropology core. Six units of upper-division or graduate Anthropology depth courses will be taken with the permission of the student's advisor, and 6 units of upper-division or graduate classes outside of Anthropology emphasizing the student's area of application will be taken with the permission of the student's advisor. Six additional units will reflect research or professional internships and thesis or project report preparation. SJSU Studies courses may not be used to fulfill the Anthropology depth requirement or field of application requirement. In addition, students are expected to conduct original research and write a thesis or, alternatively, to be engaged in professional activity and write a project report. All research or professional activity must conform to the ethical standards of the discipline of Anthropology as outlined by the American Anthropological Association, the Society for Applied Anthropology, and the university's Institutional Review Board. The policy on timely progression to the degree is available on the Applied Anthropology program website.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students must choose between Plan A (Thesis) or Plan B (Project) in order to graduate. In both cases, students must submit (to the department) and have approved a proposal for the work they are undertaking. For more information on Plan A and Plan B options and how to choose between them, please see the program FAQ on the Department of Anthropology website.

Plan A (Thesis)

Plan A students enroll in ANTH 299 - Master's Thesis and complete a thesis under the supervision of a department committee. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. A thesis is a scholarly contribution to general knowledge and follows a fairly standard, traditional form across disciplines and fields. Typically, a thesis has an introductory chapter that includes a problem statement, a literature review chapter followed by one on methodology, one or more chapters of data and findings, an analytical/interpretive chapter, and a concluding chapter. This basic template can be modified to best meet your needs, but it must be done in consultation with your committee chair to ensure it meets university requirements.

Plan B (Project)

Plan B students enroll in ANTH 298 - Anthropology Project and undertake a project in applied anthropology and prepare a report documenting the process and results. The report is submitted to the anthropology graduate faculty, but not the College of Graduate Studies. All research or professional activity must conform to the ethical standards of the discipline of anthropology as outlined by the American Anthropological Association, the Society for Applied Anthropology, and the requirements of the university's Institutional Review Board. A project report documents some activity that the student undertook to apply anthropological skills and knowledge. Because it is not submitted to the College of Graduate Studies, it does not have to meet that office's thesis requirements. Specifically, its length and organization are more variable and must be negotiated with the committee chair and the graduate faculty of the department. Project reports may be as brief as 50 pages and as long as several hundred. The report will typically document the problem, question, or issue that stimulated the application; a literature review that includes both the history of the specific problem and its context, as well as comparable problems elsewhere are included. It will document in detail the application (i.e., what the student did), its rationale (i.e., why the student took the steps he or she did), and the outcomes (i.e., what happened). Although the emphasis will be on solving or addressing a particular problem, the report will also include a systematic reflection on what happened and why, the larger lessons the student learned, and how they might inform practice in the future.

Master's Requirements (36 units)

Core Courses (18 units)

- ANTH 230 - Theory in Practice 3 *unit(s)* (GWAR)
- ANTH 231 - Applications Core 3 *unit(s)*
- ANTH 232 - Applications Core 3 *unit(s)*
- ANTH 233 - Fields of Application 3 *unit(s)*
- ANTH 234 - Advanced Research Methods 3 *unit(s)*
- ANTH 235 - Quantitative Methods 3 *unit(s)* (*Advisor approved elective may be substituted for ANTH 235*)

Anthropology Depth Requirement (6 units)

Two 3-unit upper division anthropology courses approved by faculty advisor

Field of Application Requirement (6 units)

Two 3-unit upper division SJSU courses approved by faculty advisor

Culminating Experience (6 units)

- ANTH 280 - Individual Studies 1-4 unit(s) (3 units required)

Complete One Option From (Plan A or Plan B):

Plan A (Thesis)

- ANTH 299 - Master's Thesis 1-6 unit(s)

Plan B (Project)

- ANTH 298 - Anthropology Project 1-6 unit(s) (3 units required)

Total Units Required (36 units)

Elective courses must be planned in consultation with the Anthropology Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Chicana and Chicano Studies, MA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The CCS Graduate program at SJSU trains students to become leaders in a number of professional fields, including: teaching, social services, government ad policy, health care, and community service. We also prepare students for doctoral study in Chicana/o Studies, Ethnic Studies, and other academic fields.

The MA degree offers three areas of expertise: Education, Policy, and Comparative Ethnic Studies.

MA - Chicana and Chicano Studies, Specialization in Comparative Ethnic Studies

The Comparative Ethnic Studies specialization is designed to prepare students for doctoral study in Chicana/o Studies, Ethnic Studies, and other academic fields. In addition to courses in Chicana and Chicano Studies, students

may take courses from other areas of Ethnic Studies, such as African American Studies and Asian American Studies, so as to develop strengths in several areas of Ethnic Studies.

MA - Chicana and Chicano Studies, Specialization in Education

The Education specialization is intended to prepare students for effective work in a number of fields requiring expertise in issues relevant to Chicanx and Latinx education. Among the most critical areas within this emphasis are the analysis of the K-12 educational system and the development of methods for training competent professionals to work with these communities.

MA - Chicana and Chicano Studies, Specialization in Policy Studies

The Policy Studies specialization is designed to provide students with a strong background in policy analysis and development as they relate to the Chicanx and Latinx community. The intent of this specialization is to prepare students to apply a Chicanx and Latinx perspective to the development and implementation of contemporary policies that address the needs of this and other communities.

Information about the program and important dates can be obtained at the Department of Chicana and Chicano Studies website.

Admissions Requirements

Candidates must meet all the university admission requirements. In addition to the regular application for admission to the university, each applicant must submit directly to the graduate advisor of the Chicana and Chicano Studies MA Program two letters of recommendation (faculty letters are preferred), a statement of purpose, and a writing sample (6 to 10 pages). Those students who do not meet the standards for classified status may be admitted with specific conditions as conditionally classified; the conditions must be fulfilled before the student will be advanced to candidacy for the master's degree in Chicana and Chicano Studies. If the conditions are not fulfilled, the program reserves the right to dismiss the student from the program by notifying the Associate Dean of Graduate Studies.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Requirements for Advancement to Graduate Candidacy

Students must meet the university requirements for candidacy. General university requirements for advancement to candidacy for the MA degree are detailed in the Graduate Policies & Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR). Students pursuing the Plan A (Thesis) option must meet additional departmental requirements for candidacy by securing the commitment of three faculty members of the university, two of whom must be members of the program permanent faculty, to serve as members of the student's Plan A (Thesis) committee, with one permanent faculty member agreeing to serve as chair. The committee must approve the student's thesis proposal no later than one month prior to the end of the semester preceding the one in which enrollment in the final thesis course (CCS 299) is planned.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Department Graduation Requirements

At an appropriate time, and with the assistance of the graduate advisor, students will select a specialization and a culminating experience (Plan A or Plan B Project) as outlined below:

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Plan A (Thesis)

The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. The candidate for the MA - Chicana and Chicano Studies degree must successfully pass a final oral defense of the thesis. This requirement is fulfilled by enrolling in CCS 298 and CCS 299 in consecutive semesters.

Plan B (Project)

The project is independently conducted research under the supervision of one member of the program permanent faculty. It is typically more focused on working directly with communities than the thesis. The candidate for the MA - Chicana and Chicano Studies degree must successfully complete a final project paper approved by the project advisor. This requirement can be fulfilled by enrolling in CCS 298 for one or two semesters.

Master's Requirements (30 units)

Core Courses (18 units)

- CCS 200 - Ideology and the Chicana/o Experience 3 *unit(s)* (GWAR)
- CCS 205 - Chicana/o History 3 *unit(s)*
- CCS 210 - Foundations in Chicana/o Studies 3 *unit(s)*
- CCS 225 - The Impact of American Institutions on the Chicana/o Community 3 *unit(s)*
- CCS 240 - Applied Chicana/o Studies Seminar 3 *unit(s)*
- CCS 275 - Research Methods 3 *unit(s)*

Area of Specialization (12 units)

Complete One Area of Specialization

Specialization in Comparative Ethnic Studies

Complete One Option (Plan A and Plan B Project)

Plan A (Thesis)

- CCS 252 - Comparative Ethnic Studies 3 *unit(s)*
- CCS 298 - Special Studies 1-6 *unit(s)*
- CCS 299 - Master's Thesis 3-6 *unit(s)*

Complete one course from:

- CCS 215 - Chicanas/os and Education 3 *unit(s)*
- CCS 230 - Policy Analysis and the Chicana/o Community 3 *unit(s)*

Plan B (Project)

- CCS 215 - Chicanas/os and Education 3 *unit(s)*
- CCS 230 - Policy Analysis and the Chicana/o Community 3 *unit(s)*
- CCS 252 - Comparative Ethnic Studies 3 *unit(s)*
- CCS 298 - Special Studies 1-6 *unit(s)*

Specialization in Education

Complete One Option (Plan A and Plan B Project)

Plan A (Thesis)

- CCS 215 - Chicanas/os and Education 3 *unit(s)*
- CCS 298 - Special Studies 1-6 *unit(s)*
- CCS 299 - Master's Thesis 3-6 *unit(s)*

Complete one course from:

- CCS 230 - Policy Analysis and the Chicana/o Community 3 *unit(s)*
- CCS 252 - Comparative Ethnic Studies 3 *unit(s)*

Plan B (Project)

- CCS 215 - Chicanas/os and Education 3 *unit(s)*
- CCS 230 - Policy Analysis and the Chicana/o Community 3 *unit(s)*
- CCS 252 - Comparative Ethnic Studies 3 *unit(s)*
- CCS 298 - Special Studies 1-6 *unit(s)*

Specialization in Policy Studies

Complete One Option (Plan A and Plan B Project)

Plan A (Thesis)

- CCS 230 - Policy Analysis and the Chicana/o Community 3 *unit(s)*
- CCS 298 - Special Studies 1-6 *unit(s)*

- CCS 299 - Master's Thesis 3-6 *unit(s)*

Complete one courses from:

- CCS 215 - Chicanas/os and Education 3 *unit(s)*
- CCS 252 - Comparative Ethnic Studies 3 *unit(s)*

Plan B (Project)

- CCS 215 - Chicanas/os and Education 3 *unit(s)*
- CCS 230 - Policy Analysis and the Chicana/o Community 3 *unit(s)*
- CCS 252 - Comparative Ethnic Studies 3 *unit(s)*
- CCS 298 - Special Studies 1-6 *unit(s)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Clinical Psychology, MS

- Admission Requirements
- Degree Requirements
- Master's Requirements (60 units)
- Program Learning Outcomes

The Master of Science (MS) degree in Clinical Psychology, offered by the Department of Psychology, is designed to provide the student with both theoretical and practical training in the assessment, diagnosis, and treatment of a wide variety of individual (adult and children), couples', and family mental health problems, and to prepare the student to work in private or public service agencies, independent practice, community mental health centers, or hospitals. The required academic course work and supervised fieldwork of 60 semester units meets the course work requirements for the California State Marriage and Family Therapist (MFT) license and most of the requirements for the Licensed Professional Clinical Counselor (LPCC) license (see www.bbs.ca.gov for requirements). An additional 2500-3000 hours of acceptable supervised experience is required for admission to the state MFT or LPCC licensing examination.

Admission Requirements

To be eligible for admission into the Clinical Psychology program, you must:

- Meet all of the University graduate admission requirements.
- Have a baccalaureate degree (BA or BS) in Psychology OR any baccalaureate degree (BA or BS) and a minimum of 30 semester units (45 quarter units) in Psychology.
- Have taken the REQUIRED six courses in psychology from the list provided below. These are to be included in the minimum 30 semester units (10 semester courses).

- Have a minimum GPA of 3.0 in all Psychology coursework AND a minimum of 3.0 the last 2 years of academic work attempted (60 semester or 90 quarter units).
- Provide evidence of a minimum of 100 hours of paid or volunteer applied clinical experience working with persons in a counseling/helping capacity (e.g., volunteer in home for children with developmental, emotional, and/or behavioral disorders, provide counseling on a suicide and crisis telephone hotline).
- Provide three letters of recommendation. One reference MUST be from a clinical supervisor and another MUST come from a professor or instructor who can comment on the applicant's academic work. Additional references may come from former instructors and from supervisors of previous work in volunteer placements in the clinical field.

Undergraduate Courses in Psychology Required for Admission

- General or Introduction to Psychology (SJSU code PSYC 1)
- Elementary Statistics (SJSU code STAT 95)
- Introduction to Research Methods (SJSU code PSYC 18 or PSYC 118 or PSYC 120)
- Psychobiology or equivalent (SJSU code PSYC 30)

Each of the above four (1-4) may be taken at the community college or university level and may be lower-division courses.

- Upper-division course in Abnormal Psychology (SJSU code PSYC 110)
- Upper-division course in Theory and Methods of Counseling, or Clinical Psychology (SJSU code PSYC 160, or PSYC 165)

Degree Requirements

General university requirements and procedures for completing the Master of Science degree are described in the Academic Regulations section of this catalog. In addition to these, the following departmental requirements must be fulfilled.

- The student must complete a total of 60 units in clinical psychology as specified in the table below.
- Candidates must demonstrate satisfactory performance on one or more final comprehensive examinations. These examinations are both written and oral.
- The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

The culminating experience for the Clinical Psychology program is a comprehensive ("comp") exam completed in two phases. The first phase is the written portion, and the second is the oral portion. The written portion of the second-year comp evidences the student's conceptualization, treatment development, and professional and ethical delivery of therapy for a specific client while on fieldwork placement. This written portion is evaluated by two faculty members and scored according to the criteria provided in the MS Clinical Student Handbook. If and when students pass the minimum criteria for the written portion, they advance to the oral portion of the comp.

The oral portion provides time for students to briefly present the same case that was described in the written portion, to interact with other students about each other's cases, and to field questions about their cases from faculty member examiners. The oral portion is scored according to the criteria provided in the MS Clinical Student Handbook.

Master's Requirements (60 units)

Core Courses (48 units)

- PSYC 203A - Clinical Assessment I 3 *unit(s)* (GWAR)
- PSYC 208 - Family Assessment and Intervention 3 *unit(s)*
- PSYC 209 - Psychology of Contemporary Families 3 *unit(s)*
- PSYC 210 - Advanced Psychopathology 3 *unit(s)*
- PSYC 211 - Child Psychopathology 3 *unit(s)*
- PSYC 212 - Lifespan Development 3 *unit(s)*
- PSYC 222 - Gender and Ethnic Issues in Counseling and Therapy 3 *unit(s)*
- PSYC 224A - Clinical Psychology Practicum I 3 *unit(s)*
- PSYC 224B - Clinical Psychology Practicum II 3 *unit(s)*
- PSYC 225 - Advanced Group Dynamics 3 *unit(s)*
- PSYC 226 - Addictions and Treatment 3 *unit(s)*
- PSYC 228 - Professional Ethics for Psychologists 3 *unit(s)*
- PSYC 232 - Clinical Psychopharmacology 3 *unit(s)*
- PSYC 258 - Methods of Psychotherapy 3 *unit(s)*
- PSYC 260 - Crisis and Trauma Counseling 3 *unit(s)*
- PSYC 291 - Method and Design for Applied Research 3 *unit(s)*

Culminating Experience (6 units)

Students will take PSYC 298 twice.

- PSYC 298 - Special Problems 1-6 *unit(s)*

Field Work (6 units)

- PSYC 243 - Field Work in Psychology 1-6 *unit(s)*

Total Units Required (60 units)

Communication Studies, MA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (32 units)
- Program Learning Outcomes

The Master of Arts in Communication Studies, offered by the Department of Communication Studies, is a comprehensive 32-unit program that provides advanced study in theories of communication, methodologies reflected in diverse approaches to communication research, and practice in applying concepts and methods in scholarly and

"real world" contexts. A broad range of coursework in diverse areas of communication including environmental, interpersonal, intercultural, health, organizational, media studies, pedagogy, performance studies, and rhetoric provides students with a deeper understanding of the communication process, the study of communication, and the dimensions of ethical communication and research. Select students will teach at the college level through the Teaching Associate (TA) program. Our alumni continue on to doctoral programs, teaching at colleges and universities, and careers in a wide range of professions in Silicon Valley and beyond.

Information about the MA in Communication Studies can be found on the Department of Communication Studies website.

Admissions Requirements

University Admission

Candidates who meet all university admission requirements may apply through the CSU admissions portal, Cal State Apply.

Applicants from countries in which the primary language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. Applicants who possess a baccalaureate degree from a post-secondary institution where English is the principal language of instruction are exempt from this requirement. The program does not currently require the GRE for admission.

Admission to the Program

Minimum requirements for admission to the MA in Communication Studies are a baccalaureate degree in Communication Studies or a related field, usually in the social sciences, humanities, or arts. A 3.0 grade point average (B or better) is desired. Depending on their level of preparation, applicants may be admitted in either classified or conditionally classified standing.

See how to apply for the MA in Communication Studies.

Program Requirements for Admission to Classified Standing

To be admitted to the Master of Arts in Communication Studies program in classified status, an applicant must have a grade point average of 3.0 or better in their last 60 units, and possess a baccalaureate degree in Communication Studies, or related field in the social sciences, humanities, or arts from an accredited U.S. or international university.

Program Requirements for Admission to Conditionally Classified Standing

If an applicant's preparation for advanced graduate work is considered inadequate to meet the course prerequisites or other departmental requirements, the conditions of admission will include additional BA or MA level coursework in Communication Studies, depending on the nature of the applicant's case. The program admissions letter will explain the terms and requirements.

Requirements for Advancement to Graduate Candidacy

Students must meet the university requirements for advancement to graduate candidacy. General university requirements for advancement to candidacy for the MA degree are detailed in the Graduate Policies &

Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR). For Communication Studies, candidates meet the GWAR requirement by taking COMM 297C, a required course that students will take in their second semester.

Further requirements of the department for advancement to candidacy include completion of a minimum of 12 letter-graded units, all with grades of "C" or higher, and a minimum GPA of 3.0.

Students will submit a culminating experience plan to the department's Graduate Coordinator. If the plan is satisfactory and the student is considered to be a potentially competent and mature practitioner, they will be advanced to candidacy. Students who fail to meet the expected standards will be terminated from the program.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing COMM 297C.

Culminating Experience

Students in the MA in Communication Studies complete the program with a 1-4-unit Culminating Experience selected from three options: a master's thesis, master's project, or comprehensive exam.

Plan A (Thesis) COMM 299 4 unit(s)

Students opting to complete a master's thesis will take 4 units of COMM 299. The student is responsible for securing a full-time tenured or tenure-track Communication Studies faculty member to serve as thesis advisor and committee chair. In order to do this, it is recommended that the student demonstrate, in a written proposal, that they are capable of completing a thesis, both in terms of research skills and writing ability, and that they have sufficient time to undertake a major research and writing project. Demonstrating these points does not obligate a professor to serve as an advisor, and no reason need be given to a student for declining to supervise a thesis. In consultation with their thesis advisor, the student must also secure two additional university faculty members, one of whom must be a full-time tenured or tenure-track faculty member, to serve as the thesis committee. The student must write a thesis proposal (prospectus) and have it approved by the thesis committee before enrolling in COMM 299 (typically this is done through a prospectus defense.) The thesis is written under the guidance of the thesis advisor with the assistance of the committee members. The student must pass an oral defense of the thesis. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines.

A thesis committee has the option of terminating the thesis option if the candidate does not submit an acceptable thesis within five semesters. In that situation, the student will be required to take the Plan B comprehensive examination as their culminating experience.

Plan B (Project) COMM 298 4 unit(s)

Students opting to complete a master's thesis will take 4 units of COMM 298. The student is responsible for securing a full-time tenured or tenure-track Communication Studies faculty member to serve as project advisor and committee chair. In order to do this, it is recommended that the student demonstrate, in a written proposal, that they are capable of completing a project, both in terms of research skills and writing ability, and that they have sufficient time to undertake a major research and writing project. Demonstrating these points does not obligate a professor to serve as an advisor, and no reason need be given to a student for declining to supervise a thesis. In consultation with their thesis advisor, the student must also secure two additional university faculty members, one of whom must be a full-time tenured or tenure-track faculty member, to serve as the thesis committee. The student must write a project proposal (prospectus) and have it approved by the thesis committee before enrolling in COMM 298. (Typically, this is done through a prospectus defense.) The project is completed under the guidance of the project advisor with the assistance of the committee members. The student must pass an oral defense of the project.

Plan C (Comprehensive Exam) COMM 298 1 unit(s)

Most students will take a comprehensive exam as the culminating experience. Students taking exams will enroll in 1-unit of COMM 298. Students taking an exam will therefore complete an additional 4 units of coursework.

Master's Requirements (32 units)

In addition to three core courses taken during the first year of the program, students are required to complete coursework in three areas: theoretical foundations of one or more divisions within communication studies; specific research methods/modes of inquiry; and engagement with theories and methods through applied practice.

Core Courses (12 units)

- COMM 200C - Graduate Study in Communication 4 unit(s)
- COMM 201C - Methods and Methodologies of Communication Studies 4 unit(s)
- COMM 297C - Advanced Writing Workshop 4 unit(s) (GWAR)

Seminars (12 units)

Complete a minimum of 4 units from each area (Foundations, Inquiry, and Practice).

Foundations (Theory) Seminar Courses (4 units)

- COMM 210F - Interpersonal Communication 4 unit(s)
- COMM 222F - Performance and Culture 4 unit(s)
- COMM 244F - Organizational Communication 4 unit(s)
- COMM 249F - Rhetorical Theory 4 unit(s)
- COMM 250F - Communication Theory: Critical and Interpretive 4 unit(s)
- COMM 255F - Seminar in Communication Theory 4 unit(s)
- COMM 274F - Intercultural Communication 4 unit(s)

Inquiry (Research Methods) Courses (4 units)

- COMM 221I - Performing Narratives 4 unit(s)
- COMM 245I - Communication Criticism 4 unit(s)
- COMM 295I - Special Topics in Communication Inquiry 4 unit(s)

Practice (Applied) Courses (4 units)

- COMM 282P - Communication Pedagogy 4 *unit(s)*
- COMM 285A - Teaching Associate Practicum I 2 *unit(s)*
- COMM 285B - Teaching Associate Practicum II 1-3 *unit(s)*

Advanced Specialization/Electives (4 units)

- Additional 200-level seminar (see above) 4 *unit(s)*
- COMM 193 - Activity Projects in Intercultural/International Communication 1-3 *unit(s)* (Requires instructor consent.)
- COMM 280 - Independent Study 1-4 *unit(s)* (Requires instructor consent.)
- COMM 291 - Communication Studies Graduate Internship Program 1-4 *unit(s)* (Requires instructor consent.)
- Study Abroad units from other departments. 1-4 *unit(s)* (Requires approval from Graduate Program Director.)
- 200-level course from a program other than Communication Studies. 1-4 *unit(s)* (Requires approval from Graduate Program Director.)

Culminating Experience (4 units)

Complete One Option (Plan A Thesis, Plan B Project, or Plan C Comp Exam).

Plan A (Thesis) (4 units)

Students opting to complete a Thesis register for 4 units of COMM 299.

- COMM 299 - Master's Thesis 1-6 *unit(s)* Requires instructor consent.

Plan B (Project) (4 units)

Students opting to complete a Project register for 4 units of COMM 298.

- COMM 298 - Master's Project or Comprehensive Exam 1-4 *unit(s)* Requires instructor consent.

Plan B (Comprehensive Exam) (4 units)

Students opting to take Comprehensive Exams register for 1 unit of COMM 298 and complete 3 units of additional coursework (Seminars or Electives) to earn a minimum of 32 total units.

- COMM 298 - Master's Project or Comprehensive Exam 1-4 *unit(s)*
- Additional seminar or elective chosen from above. 3 *unit(s)*

Total Units Required (32 units)

In order to graduate, students must achieve a minimum grade point average of 3.0 in both their candidacy coursework and in their SJSU cumulative coursework.

Seminar substitution: when deemed necessary for extenuating circumstances or a specific course of study, students may substitute an F, I, or P seminar for a seminar from another category (i.e., an F for a P, and I for an F. etc.) with the approval of the Graduate Program Director.

Credit for undergraduate coursework: Students may earn up to 4 units of coursework for study abroad (COMM 193/COMM 195). In rare circumstances, students may argue for the inclusion of an upper division undergraduate course other than study abroad, such as COMM 198 or an F, I, or P course in a specific area of study. Students must demonstrate the importance of the course to their program of study and receive approval from the Graduate Program Director.

All 295 courses may be repeated for credit for up to 8 units.

Core substitution: In rare circumstances, students may substitute a core course from another MA Program with the approval of the Graduate Program Director and the department Chair.

Criminology, Global Criminology Concentration, MS

- Admission Requirements
- Requirements for Advancement to Candidacy
- University Graduation Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The Department of Justice Studies at San José State University offers an online Master of Science in Criminology with a Concentration in Global Criminology designed to adapt to the ever-changing environment of the justice and legal systems, and the discipline of criminology. It uniquely combines the advanced study of contemporary international crime and the various responses to crime around the globe with analytic and research techniques used by advanced scholars. It provides an international comparative curriculum that develops analytical skills, understanding of legal concepts, theoretical competency, and abilities to apply criminology in practical ways. It aims to equip graduates with a truly global outlook on crime and criminal justice, a commitment to international justice, and professional competencies to apply practices from around the globe to meet the particular needs of their communities.

This degree program is housed in the Department of Justice Studies.

Graduate Coordinator: Dr. Jodie Warren

Admission Requirements

To be considered for admission to the MS in Criminology program, applicants must complete the university admission requirements, as well as have a baccalaureate degree from an accredited four-year college or university, minimum grade point average of 3.0 in the last 60 credits of coursework, a general understanding of computers and technology, and access to a computer with Internet. International applicants must have a TOEFL score of 550 (Paper Based), 213 (Computer Based), or 80 (Internet Based).

International (Foreign) Students

Documentation of the applicant's TOEFL score should accompany other admission materials. For TOEFL requirements see Graduate Program Test Requirements.

Requirements for Advancement to Candidacy

For advancement to candidacy for the Master of Science degree in Criminology, Concentration in Global Criminology, students must meet the general university requirements for advancement to candidacy outlined in the academic requirements section of this catalog. The University requires that all graduate students complete the Graduation

Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Requirements for the MS - Criminology, Concentration in Global Criminology.

Each student must take a core curriculum of 15 units (JS 265, JS 266, JS 271, JS 272, and JS 273). Elective courses must be 200-level courses in the department. Subject to graduate coordinator approval, two graduate courses in other departments or programs may be taken as electives, if the student demonstrates their relevance to the student's program of study, and/or career goals. Undergraduate courses may not count toward the 30 units of required graduate course work. Students who are academically or administratively disqualified from the program will generally not be readmitted.

Special Session Program Information

Academic Programs offered through Special Session are operated by Professional & Global Engagement. Registration and enrollment in a Special Session course or program must use the special session application form and will follow the special session fees and course schedules. Note that regular session students seeking to enroll simultaneously in a special session course or the program will trigger a separate and additional set of fees. This may require an additional enrollment appointment from the Registrar and it may have implications for financial aid status or requirements. Please visit the Professional Education website for more information.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core Courses (15 units)

- JS 265 - Comparative Criminal Justice Systems 3 *unit(s)* (GWAR)
- JS 266 - Applied Research Methods and Statistics 3 *unit(s)*
- JS 271 - International Human Rights 3 *unit(s)*
- JS 272 - Policing in Global Contexts 3 *unit(s)*
- JS 273 - International Criminology and Juvenile Delinquency 3 *unit(s)*

Concentration Requirements (12 units)

- JS 267 - Crime and Gender Around the World 3 *unit(s)*
- JS 268 - Immigration and International Law 3 *unit(s)*
- JS 269 - Cyber Forensics 3 *unit(s)*
- JS 270A - Global Terrorism 3 *unit(s)*

Culminating Experience (3 units)

- JS 274 - Applied Project 3 *unit(s)*

Total Units Required (30 units)

Economics, Applied Economics Concentration, MA

- Requirements for Admission with Classified Standing
- Requirements for Admission with Conditionally Classified Standing
- Requirements for Advancement to Candidacy for the MA - Economics
- Requirements for Graduation
- Master's Requirements (32-33 units)
- Program Learning Outcomes

Requirements for Admission with Classified Standing

An applicant first must meet the requirements for admission to the university. In addition, the applicant should possess a minimum grade point average of "B". Bachelor degrees in fields other than economics are acceptable for admission to the department. For admission to classified standing, an applicant's preparation in calculus (MATH 71 or MATH 30), statistics (STAT 95), and intermediate microeconomics (ECON 101), intermediate macroeconomics (ECON 102) and intermediate econometrics (ECON 103A), must be satisfactory (grades of "B" or better).

Requirements for Admission with Conditionally Classified Standing

A student who does not meet all requirements for admission to classified standing may be admitted into the program on a conditionally classified basis if he or she has demonstrated an interest in and an ability to master economic analysis, and has completed introductory statistics (STAT 95) and calculus (MATH 71 or MATH 30). Such admission will require students to take specific courses, ECON 101, ECON 102, and ECON 103A, with grades of "B" or better, before taking graduate (200-level) courses.

Requirements for Advancement to Candidacy for the MA - Economics

To be advanced to candidacy for the Master of Arts degree, a student must first meet the university requirements for the degree as stated in the Academic Regulations section of this catalog. Also, a candidate:

- Must have at least a 3.0 ("B") average in nine semester hours of approved San José State University courses in economics at the 100- or 200-level.
- Must obtain approval of a formal master's degree program from the departmental graduate advisor and from the University Graduate Committee.
- Must have successfully completed the Graduation Writing Assessment Requirement (GWAR). The University requires that all graduate students complete the GWAR as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Graduate Theory Grade Requirement

All master's degree students must complete a microeconomic theory course (ECON 201), a macroeconomic theory or monetary theory course (ECON 202 or ECON 235), and ECON 205 with a grade of "B" or better. All 100 - level courses must be completed with a "B" or better. Policies concerning Probation and Disqualification are available online and in the Economics Office.

Undergraduate Course Grade Requirement

Master's degree students may count a limited number of 100-level undergraduate courses as approved electives; however, these courses must be completed with a grade of "B" or better and must be approved in advance by a department graduate advisor. Students earning less than a "B" in any of these classes are allowed one attempt to retake and achieve the minimum grade. Policies concerning Probation and Disqualification are available online and in the Department of Economics Office.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

In consultation with the department graduate coordinator, the candidate will develop and pursue a program of study. The candidate must successfully complete all requirements of the selected plan including the course work specified in the Master's Degree Approval Program. At an appropriate time, and with the assistance of the graduate advisor, the student chooses a proposed Master's degree program and Plan A or Plan B culminating experience as outlined below.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing ECON 203A.

Culminating Experience

Plan B (Comprehensive Examination)

Most students complete a final written comprehensive examination. The exam covers three subjects: microeconomic theory, macroeconomic/monetary and econometrics. Students register once for one unit of ECON 298E in the semester they plan to take the examination. Students not passing the exam may take it a total of three times. Policies concerning Probation and Disqualification for failure to complete the exam are available online and in the Economics Office.

Master's Requirements (32-33 units)

Core Courses (16 units)

- ECON 104 - Mathematical Methods for Economics 4 unit(s)
- ECON 201 - Seminar in Microeconomic Analysis 3 unit(s)
- ECON 203A - Economic Research Methods 3 unit(s) (GWAR)

- ECON 205 - Workshop in Economic Analysis 3 *unit(s)*

Complete One Course:

- ECON 202 - Seminar in Macroeconomic Analysis 3 *unit(s)*
- ECON 235 - Seminar in Monetary Theory and Policy 3 *unit(s)*

Concentration Requirements (9-10 units)

- ECON 203B - Seminar in Econometric Methods 3 *unit(s)*

Complete Two Courses:

- ECON 138 - Business and Economic Forecasting 4 *unit(s)*
- ECON 232 - Seminar in Public Finance 3 *unit(s)*
- ECON 241 - Seminar in Law and Economics 3 *unit(s)*
- ECON 251 - Seminar in Labor Economics 3 *unit(s)*
- ECON 297 - Experimental Methods in Economics 3 *unit(s)*

Electives (6 units)

- Approved 100- or 200-level courses

Culminating Experience (1 unit)

- ECON 298E - Special Study Comprehensive Exam 1 *unit(s)*

Total Units Required (32-33 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 12.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Economics, MA

- Requirements for Admission with Classified Standing
- Requirements for Admission with Conditionally Classified Standing
- Requirements for Advancement to Candidacy for the MA - Economics
- Requirements for Graduation
- Master's Requirements (32 units)
- Program Learning Outcomes

Requirements for Admission with Classified Standing

An applicant first must meet the requirements for admission to the university. In addition, the applicant should possess a minimum grade point average of "B". Bachelor degrees in fields other than economics are acceptable for admission to the department. For admission to classified standing, an applicant's preparation in calculus (MATH 71 or MATH 30), statistics (STAT 95), and intermediate microeconomics (ECON 101), intermediate macroeconomics (ECON 102) and intermediate econometrics (ECON 103A), must be satisfactory (grades of "B" or better).

Requirements for Admission with Conditionally Classified Standing

A student who does not meet all requirements for admission to classified standing may be admitted into the program on a conditionally classified basis if he or she has demonstrated an interest in and an ability to master economic analysis, and has completed introductory statistics (STAT 95) and calculus (MATH 71 or MATH 30). Such admission will require students to take specific courses, ECON 101, ECON 102, and ECON 103A, with grades of "B" or better, before taking graduate (200-level) courses.

Requirements for Advancement to Candidacy for the MA - Economics

To be advanced to candidacy for the Master of Arts degree, a student must first meet the university requirements for the degree as stated in the Academic Regulations section of this catalog. Also, a candidate:

- Must have at least a 3.0 ("B") average in nine semester hours of approved San José State University courses in economics at the 100- or 200-level.
- Must obtain approval of a formal master's degree program from the departmental graduate advisor and from the University Graduate Committee.
- Must have successfully completed the Graduation Writing Assessment Requirement (GWAR). The University requires that all graduate students complete the GWAR as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Graduate Theory Grade Requirement

All master's degree students must complete a microeconomic theory course (ECON 201), a macroeconomic theory or monetary theory course (ECON 202 or ECON 235), and ECON 205 with a grade of "B" or better. All 100 - level courses must be completed with a "B" or better. Policies concerning Probation and Disqualification are available online and in the Economics Office.

Undergraduate Course Grade Requirement

Master's degree students may count a limited number of 100-level undergraduate courses as approved electives; however, these courses must be completed with a grade of "B" or better and must be approved in advance by a department graduate advisor. Students earning less than a "B" in any of these classes are allowed one attempt to retake and achieve the minimum grade. Policies concerning Probation and Disqualification are available online and in the Department of Economics Office.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

In consultation with the department graduate coordinator, the candidate will develop and pursue a program of study. The candidate must successfully complete all requirements of the selected plan including the course work specified in the Master's Degree Approval Program. At an appropriate time, and with the assistance of the graduate advisor, the student chooses a proposed Master's degree program and Plan A or Plan B culminating experience as outlined below.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing ECON 203A.

Culminating Experience

Plan A (Thesis)

The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. It is the candidate's responsibility to find an Economics Faculty member to Chair the thesis committee, and work with the Chair to determine the other members of the committee and the thesis topic.

Plan B (Comprehensive Examination)

Most students complete a final written examination, not a thesis. The comprehensive exam covers three subjects: microeconomic theory, macroeconomic/monetary and econometrics. Students register once, for one unit of ECON 298E in the semester they plan to take the examination. Students can take the exam a total of three times. Policies concerning Probation and Disqualification for failure to complete the exam are available online and in the Economics Office.

Master's Requirements (32 units)

Core Courses (16 units)

- ECON 104 - Mathematical Methods for Economics 4 unit(s)
- ECON 201 - Seminar in Microeconomic Analysis 3 unit(s)
- ECON 203A - Economic Research Methods 3 unit(s) (GWAR)
- ECON 205 - Workshop in Economic Analysis 3 unit(s)

Complete One Course:

- ECON 202 - Seminar in Macroeconomic Analysis 3 unit(s)
- ECON 235 - Seminar in Monetary Theory and Policy 3 unit(s)

Electives (12 units)

- Approved 100- or 200-level courses

Culminating Experience (4 units)

Plan A (Thesis)

- ECON 299 - Master's Thesis 1-6 *unit(s)*

Plan B (Comprehensive Exam)

- ECON 298E - Special Study Comprehensive Exam 1 *unit(s)*
- One additional Economics elective 3 *unit(s)*

Total Units Required (32 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 12.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Environmental Studies, MS

- Admissions Requirements
- Requirements for Admission to Classified Standing
- Requirements for Admission to Conditionally Classified Standing
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science in Environmental Studies program, offered by the Department of Environmental Studies, is designed to prepare students for careers as environmental professionals or to pursue further academic training in Ph.D. and other advanced degree programs. Global and local perspectives are integrated in the coursework and the faculty and students embrace a diversity of perspectives. Faculty members work closely with graduate students within the above areas of specialization to execute a program of study. For additional information, review the list of faculty thesis advisors and contact those with focus areas of interest to you. See the department website for more information: www.sjsu.edu/envs/graduate.

Our interdisciplinary curriculum embraces both quantitative and qualitative research, and some of the topics that it focuses on include:

- California Wild (Protected) Lands
- Forest Ecology and Conservation
- Climate Impacts Research
- Human Ecology
- Coastal Environments
- Agroecology
- Insect Conservation
- Corporate Sustainability
- Marine Environments

- Energy
- Nature and Conservation Photography
- Environmental Education
- Political Ecology
- Environmental Impact Assessment
- Pro-environmental Behavior
- Environmental Justice
- Sustainable Food Systems
- Environmental Policy
- Water Resources Management
- Environmental Restoration
- Wetlands Ecology, Restoration, and Management
- Wildlife Conservation and Management

Admissions Requirements

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system at calstate.edu/apply and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the Environmental Studies Program. See the GAPE Graduate Admissions website and this Catalog for general information about admission requirements at SJSU.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE. For TOEFL Requirements, see the Policies and Procedures section, Graduate and Post-Baccalaureate Information.

Requirements for Admission to Classified Standing

The Department of Environmental Studies admits students to the Master of Science programs in Classified or Conditional Standing. Contact the department or see our admissions materials for specific application deadlines. For admission to classified standing the department requires the following:

- An undergraduate degree in Environmental Studies or related field from an accredited institution.
- An overall grade point average of 3.0 ("B") or better for the last 60 semester units of academic study.
- The capability, in the opinion of the graduate committee, of successfully completing degree requirements.
- The removal of deficiencies if preparation differs markedly from the BS - Environmental Studies at San José State University. (BA students may be required to complete a general science background.) Courses used to remove such deficiencies cannot be used to fulfill MS requirements. For further information, see the graduate coordinator.
- Two letters of recommendation from university faculty members or professionals in the field.
- A personal statement of purpose that describes your background and objectives for seeking the MS - Environmental Studies at SJSU. This letter should also convey a sense of focus and direction for thesis research and potential faculty thesis advisers in the department.
- Applicants from countries in which the native language is not English must achieve a minimum score of 580 (Paper Based), 237 (Computer Based), or 92 (Internet Based) on the TOEFL exam for foreign students.

Requirements for Admission to Conditionally Classified Standing

If not accepted into classified standing, the applicant may qualify for conditionally classified status for which the following will be required: the ability, in the opinion of the departmental graduate committee, to remove deficiencies in a period not to exceed the equivalent of one full-time semester of coursework. The individual admission letter will explain the required terms and conditions for attaining Classified standing.

Requirements for Advancement to Candidacy

Once a student has completed all required courses, with the exception of ENVS 299 and has submitted a completed and signed thesis proposal to the Graduate Coordinator, a Petition to Advance to Candidacy must be submitted to the Graduate Coordinator and GAPE office. The application to candidacy should be submitted a year prior to the expected graduation date. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, students must secure a commitment of three faculty members of the university, two of whom must be members of the permanent faculty, to serve as members of the student's Plan A (thesis) or Plan B (Project) committee, with one permanent faculty member agreeing to serve as chair. The committee must approve the student's thesis or project proposal for the master's degree no later than one month prior to the end of the semester preceding the one in which enrollment in the final project or thesis course(s) is planned.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

In consultation with the department graduate coordinator, the candidate will develop and pursue a program of study. The candidate must successfully complete all requirements of the selected plan including the course work specified in the Master's Degree Approval Program.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Students choose a Plan A (Thesis) or Plan B (Project) option as their program culminating experience. Each student must secure the commitment of three faculty members of the university, two of whom must be members of the permanent faculty, to serve as members of the student's Plan A (thesis) or Plan B (Project) committee, with one permanent faculty member agreeing to serve as chair. The committee must approve the student's thesis or project proposal for the master's degree no later than one month prior to the end of the semester preceding the one in which enrollment in the final project or thesis course(s) is planned.

Plan A (Thesis)

The thesis will include original research on a topic approved by the thesis committee and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will undergo a thorough review and revision process under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. In addition, the candidate for the MS degree must successfully pass a final oral defense of the thesis.

Plan B (Project)

Under rare circumstances, a very strong project of appropriate scope and depth for master's level work might be approved in lieu of the thesis. This option requires the written consent of at least three graduate advisors, the

graduate coordinator, and the department chair. In addition to the required coursework, Plan B students will take comprehensive examinations on three topics to be arranged by the student's project committee.

Master's Requirements (30 units)

Seminars (9 units)

- ENVS 200 - Seminar: Environmental Methods 3 *unit(s)*
- ENVS 250 - Seminar: Environmental Thought and Philosophy 3 *unit(s)*
- ENVS 297 - Research and Proposal Development 3 *unit(s)* (GWAR)

Application Science (9 units)

9 units of 100- or 200-level field analysis, laboratory work, or other form of application science selected with advisor's approval.

Electives (6 units)

- 100- or 200-level courses in Environmental Studies or related fields selected with advisor's approval. The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Culminating Experience (6 units)

Complete One Option (Plan A or Plan B):

Plan A (Thesis) (6 units)

- ENVS 299 - Master's Thesis 1-6 *unit(s)*

Plan B (Project) (6 units)

- ENVS 298 - Special Study 1-4 *unit(s)* (3 *units required*)
- Additional 3 units of electives selected with advisor's approval 3 *unit(s)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Geographic Information Science (GISc), MS (Accepting Students for Fall 2025)

- Admission Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Program Learning Outcomes

The Master of Science in Geographic Information Science (MS GISc) is a one-year graduate degree offered by the Department of Urban and Regional Planning. With a streamlined program of study, students will learn theory and applications of spatial thinking/reasoning and use of GIS to support problem solving and decision making. The program will harness a wide array of courses in GISci, statistics, computer science, geography, urban and regional planning and their intersection through 8 upper division courses. With these courses, students will use the geospatial competency model to be increasingly challenged in face to face, project-based courses to prepare them for a rapidly expanding 21st Century technology intensive profession. Key outcomes of the program of study include understanding of theory and scholarship, ability to perform spatial data collection and analysis, accurate and ethical use of geospatial tools and techniques, and the ability to communicate technical information visually, orally, and in written forms.

MS GISc graduates are eligible for the **Optional Practical Training (OPT) 24-month extension for STEM students.**

Geography/GIS graduate advisor: Dr. Ahoura Zandiatashbar

Admission Requirements

Candidates must meet all of the university admission requirements. The MS GISc application materials include:

- Letters of Recommendation: Applicants are required to submit 2 letters of recommendation commenting on their ability for potential graduate studies and research in MS GISc graduate program.
- Transcripts: Official transcripts from all higher educational institutions attended (even those where you did not get a degree) to be submitted to the Graduate Admissions Office.
- Resume (CV): Current Resume or CV
- Essay: A short essay (maximum 2 pages) that briefly describes applicant's education and career background, past research experience, anticipated master project and topic, and reasoning for pursuing a Master's in Geographic Information Systems. It is important to note that the anticipated master's project or topic will not influence the admission decision.
- Bachelor's Degree: Applicants must have completed a Bachelor's Degree with some focus on geography or spatial analysis from an accredited institution. If there is no geography or spatial analysis, applicants may be asked to enroll in related undergraduate courses

Basic requirements for admission to the Graduate Division are outlined in the Admissions section. In addition, the department requires the following for admission to classified standing:

- Undergraduate GPA Requirement: Applicants must have completed a Bachelor's Degree program with a minimum cumulative GPA of 3.0 (4.0 scale).
- Writing Sample: Academic/professional writing samples
- GRE (OPTIONAL): The GRE General Test score can be optionally submitted along with the packet to compare and rank applicants or for potential financial aid or funded positions. There is no minimum requirement, but the GRE score could be used to compare and rank applicants or to be considered for potential financial aid or funded positions.
- TOEFL: Applicants from countries in which the native language is not English must have:
 - TOEFL iBT (Internet-based) 80
 - TOEFL paper-based 550
- Academic International English Language Testing System (IELTS) 6.5
- Academic Pearson Test of English (PTE) 53

- International Students: International students are advised to closely follow guidelines for submitting transcripts and any other supporting documents, including demonstrating competence in English, available on the Graduate Admissions & Program Evaluation website.
- Prerequisites for non-GIS applicants:
- GIS171 - Vector GIS analysis/modeling refresher (1 unit)
- GIS182 - Raster GIS analysis/modeling refresher (1 unit)

Requirements for Advancement to Candidacy

The student may be advanced to candidacy by complying with requirements of the university as outlined in the Master's Requirements section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Requirements for Graduation

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Culminating Experience

GIS171 and GIS182 represent the culmination of the MS in Geographic Information Science program. Through these courses, under faculty guidance students undertake a comprehensive project focusing on real-world geospatial challenges, integrating advanced GIS techniques and emerging technologies.

GIS171 - Master Report 1: Final Project Research Design (3 units): Students initiate their projects by identifying a relevant geospatial issue and developing a project proposal under faculty guidance. They leverage GIS tools to analyze data and formulate insights, laying the foundation for innovative solutions.

GIS182 - Final Project Development (3 units): In the final phase, students refine their projects, creating user-friendly interfaces and communicating findings effectively. Through presentations and deliverables, they showcase the practical application and impact of their GIS solutions.

Innovative Outcomes: The MS GIS Culminating Experience encourages diverse outputs, including comprehensive reports, web-tools, mobile applications, and GeoAI-based products. Students are encouraged to explore innovative solutions tailored to real-world needs, with opportunities for external applications in collaboration with potential user companies.

Upon completion, students emerge as adept geospatial professionals, equipped to address complex spatial challenges in diverse fields. Their projects serve as tangible contributions to the field of GIS, demonstrating their ability to innovate and lead in a rapidly evolving landscape. The Culminating Experience in MS GIS through GIS171 and GIS182 exemplifies the program's commitment to hands-on learning and practical application. As students embark on their post-graduate endeavors, they carry with them the skills, knowledge, and passion to make meaningful contributions to the field of Geographic Information Science.

Master's Requirements (30 units)

Fall Semester (15 units)

- GIS 205 - Spatial Data Literacy and Ethics 4 unit(s) (GWAR)

- GISC 210 - Spatial Data Science Through Open-Source GIS Technologies *4 unit(s)*
- GISC 220 - Spatial Statistics, Analysis, & Modeling *4 unit(s)*
- GISC 298A - Master Report 1: Final Project Research Design *3 unit(s)*

Spring Semester (15 units)

- GISC 230 - WebGeoViz *(4 units)*
- GISC 279 - Python for Geo-Analysis *(4 units)*
- GISC 282 - Advanced Remote Sensing *(4 units)*
- Culminating Experience: GISC 298B - Final Project *(3 units)*

Total Units Required (30 units)

Geography, MA

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

The MA in Geography is offered by the Department of Urban and Regional Planning. Admission to the graduate program is flexible, and potential students are evaluated on a case-by-case basis. A strong record based on either undergraduate performance or employment experience is expected. Graduate students without a geography degree can expect added course work in geographic literature and theory. More information can be found on the Geography webpage.

Admissions Requirements

All graduate applicants must submit a complete graduate application by applying through the CSU Cal State Apply system. Additional information regarding university admission requirements is in this catalog. Applicants from countries in which the native language is not English must achieve a minimum English language proficiency test score as indicated on the Graduate Program Test Requirement webpage.

Admissions to Classified Standing

Basic requirements for admission to the Graduate Division are outlined in the Admissions section. In addition, the department requires the following for admission to classified standing:

- An undergraduate degree in geography or a reasonably related field from an accredited institution.
- A 3.0 ("B") overall grade point average for the last 60 semester units of academic study.
- The capability, in the opinion of the Department Graduate Committee, of successfully completing the degree requirements.
- The removal of deficiencies if preparation differs markedly from the BA - Geography at San José State University.

Admissions to Conditionally Classified Standing

If not accepted into classified standing, the applicant may qualify for conditionally classified status for which the following will be required:

- The ability, in the opinion of the Department Graduate Committee, to remove deficiencies which do not exceed the equivalent of one full-time semester of course work.
- The qualifications to be accepted to classified standing within a reasonable length of time, and the background to conduct studies at the graduate level.

Requirements for Advancement to Candidacy

The student may be advanced to candidacy for the MA - Geography by complying with requirements of the university as outlined in the Academic Regulations section of this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program. In addition, students must obtain their thesis advisor's approval for their thesis proposal.

Students will complete a course of study designed to prepare them for professional work in their chosen subfield. Accordingly, they will need to take specific courses to support research and project work in that field.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

In consultation with the department advisor, the candidate will develop and pursue a program of study outlined in Plan A or Plan B. The candidate must successfully complete all requirements of the selected plan including the course work specified in the Master's Degree Approved Program.

Plan A (with Thesis)

- A minimum of eighteen units in geography.
- The thesis, based on independent research, is to be conducted under the direction of a thesis advisor and must be acceptable to and approved by the Thesis Committee. The Committee consists of the thesis advisor (committee chair), an additional member from the university faculty, and an additional member who may be from outside the university. The thesis topic shall be developed within the departmental foci in consultation with the thesis advisor. The thesis must conform to the SJSU Master's Thesis and Doctoral Dissertation Guidelines.
- Final Examination: The thesis must be successfully defended orally before the thesis committee.

Plan B (without Thesis)

- A minimum of twenty-one units in geography, with at least 50% of the units in graduate-level courses.
- Project: The student shall present the results of a project in one of the areas of departmental focus. Appropriate projects include research completed for a geography graduate seminar or an independent study conducted under the

supervision of a faculty advisor. The results will be reported in a written paper and other materials submitted to the department, and will be presented formally to a geography faculty and student colloquium for acceptance.

Master's Requirements (30 units)

Plan A (with Thesis) (30 units)

Core Seminar (3 units)

- GEOG 290 - Seminar in Research Design for Geographic Information Science 3 *unit(s)* (GWAR)

Geography Seminars (6 units)

Complete two courses from:

Courses can be repeated twice if topic changes.

- GEOG 239 - Geographic Information Technology 3 *unit(s)*
- GEOG 279 - Geographic Information Science Applications 3 *unit(s)*
- GEOG 282 - Advanced Geographic Techniques 3 *unit(s)*

Culminating Experience (6 units)

- GEOG 299 - Master's Thesis 1-6 *unit(s)*

Electives (15 units)

100 or 200-level courses in geography or related fields selected with advisor's approval. Students should take the following courses, depending on their area of focus:

- GEOG 282 - Advanced Geographic Techniques 3 *unit(s)*
- GEOG 195 - Open Source GIS 3 *unit(s)*

Three Additional Units

- GEOG 173 - Drones and Spatial Data Collection 3 *unit(s)*
- GEOG 175 - Geographic Information Systems Project Development 3 *unit(s)*
- GEOG 182 - Programming for GIS 3 *unit(s)*

Plan B (without Thesis) (30 units)

Core Seminar (3 units)

- GEOG 290 - Seminar in Research Design for Geographic Information Science 3 *unit(s)* (GWAR)

Geography Seminars (9 units)

Complete three courses from:

- GEOG 239 - Geographic Information Technology 3 *unit(s)*
- GEOG 279 - Geographic Information Science Applications 3 *unit(s)*
- GEOG 282 - Advanced Geographic Techniques 3 *unit(s)*

Electives (18 units)

At least 3 units must be 200-level.

100 or 200-level courses in geography or related fields selected with advisor's approval. Students should take the following courses, depending on their area of focus:

- GEOG 282 - Advanced Geographic Techniques 3 *unit(s)*
- GEOG 195 - Open Source GIS 3 *unit(s)*

Three Additional Units

- GEOG 173 - Drones and Spatial Data Collection 3 *unit(s)*
- GEOG 175 - Geographic Information Systems Project Development 3 *unit(s)*
- GEOG 182 - Programming for GIS 3 *unit(s)*

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor. The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15. Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

History, MA

- Requirements for Admission to Classified Standing
- Requirements for Admission to Conditionally Classified Standing
- University Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (30 units)
- Program Learning Outcomes

While designed to strengthen students' depth and breadth of historical knowledge, the MA in History requires those who study the past at an advanced level to move beyond the acquisition of content knowledge and develop the more complex skills and habits of mind associated with historiography-including synthesis, analysis, and evaluation. This course of study serves those preparing to teach history at community colleges, those seeking preparation for the doctorate, museum curators, historical archivists, historians working in governmental agencies, and secondary teachers choosing a traditional Master's degree.

Requirements for Admission to Classified Standing

Prospective students must apply separately to the university to obtain approval for graduate-level admission and to the department to obtain admission into the MA in History program. Applicants must meet all the university admission requirements as outlined in this catalog and stated in subsequent policy changes (this refers both to admission and

graduation procedures). Students can be admitted in either classified or conditionally classified standing. Admission to classified standing for the MA - History requires that the undergraduate preparation of the applicant be comparable to that of the BA degree at San José State University. This preparation must include one upper-division or graduate course in historical method and a course in historiography. The applicant who does not have this preparation must remove all deficiencies after admission to the program. Students who have a baccalaureate degree in a field other than history will be required to complete up to 8 units in upper-division or graduate history courses. Units thus taken will not be counted toward the minimum 30 units required for the MA - History. Requirements and policies change; please refer to the Department of History website for the most current information.

Requirements for Admission to Conditionally Classified Standing

A student who does not meet all requirements for admission in classified standing for the MA - History may be admitted in conditionally classified status. The graduate advisor will list on the admissions notification all deficiencies and courses that must be taken while in the program.

University Requirements

The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirement webpage.

Requirements for Advancement to Candidacy

At least one semester before a candidate expects to graduate, the student must complete the Petition for Advancement to Graduate Candidacy form delineating the entire degree program, that is, the courses that the student has completed or expects to complete toward the Master's. The candidate must submit the form to the Graduate Advisor and then to GAPE for final approval. Through this procedure, the student's entire program will be examined to determine whether it complies with all departmental and university requirements for the degree, including the university requirement for demonstrated competency in written English.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Department Graduation Requirements

Following admission to the university and the department, the student should consult the history department website and speak with the graduate advisor regarding degree requirements and a proposed degree program. Candidates must complete 20 units of course work in one of the following fields of study: United States History, European History or World History. Eight units may be taken in any field of history. Two units will focus on professional development. Specialists in European History and United States History may apply one World History Colloquium (HIST 220) to their primary field, and World History specialists may apply one U.S. History Colloquium (HIST 210A) or one European History Colloquium (HIST 209 or HIST 211) to their primary field. Five courses and the 2 units of

professional development --a total of 22 units-- must be completed at the graduate level. All students must maintain a 3.0 GPA average to remain in the program and either pass the comprehensive examination or complete a thesis to receive the degree.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

Plan B (Comprehensive Examination)

In addition to the course of study outlined above, graduate students must take and pass a comprehensive examination (Plan B). On the exam, the student is expected to demonstrate considerable breadth and depth of knowledge, a familiarity with historiographical issues, and adherence to acceptable rules of grammar, spelling and literary style in presentation. The examination will be scheduled toward the end of the fall and spring semesters, and students must pass the examination within three attempts or no degree will be awarded.

Plan A (Thesis)

In some exceptional cases, students may substitute a thesis (Plan A) for the comprehensive examination. The thesis must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. It will be written under the guidance of the candidate's thesis committee chair with the assistance of the thesis committee. A thesis option will be considered only upon the nomination of a professor, who agrees to serve as the first reader. The student must demonstrate to the nominating professor, in a written proposal, that he or she is capable of completing a thesis, both in terms of research skills and writing ability, and that he or she has sufficient time to undertake a major research and writing project. In addition, the proposed project must have intrinsic historical value. Demonstrating these points does not obligate a professor to nominate or to serve as a first reader, and no reason need be given to a student for declining to supervise a thesis. Permission to write a thesis is also contingent on finding two other professors willing to serve as second and third readers; they also serve entirely at their own discretion. Finally, the department's graduate studies committee must approve all thesis proposals. After all three readers have signed the thesis, the candidate must submit it to the University for final approval.

A thesis committee has the option of terminating the thesis option if the candidate does not submit an acceptable thesis within five semesters. In that situation, the student will be required to take the Plan B comprehensive examination as the program culminating experience.

Language Requirement

All candidates for general MA in History must demonstrate competency in one foreign language. The sole exception are students whose primary field is U.S. History, who may, if they do not wish to meet the language requirement, take two history graduate-level courses in substitution.

The language competency requirement may be met in four ways:

- Through examination by a history faculty member with expertise in your language. The exam will be a translation of approximately 500 words to be completed in two hours with a hard-copy dictionary allowed.
- By taking two years of a foreign language at a university or community college. An average grade of "C" or better must have been attained, and the coursework completed within five years of admission to the university.
- If your primary concentration is European History, you may also fulfill this requirement by taking one year of Greek and one year of Latin.
- By taking and passing the Educational Testing Service Graduate Foreign Language Exam.

Master's Requirements (30 units)

Professional Development (2 units)

- HIST 298 - Special Study 1-6 unit(s) (*Should be completed during student's first semester*)

Colloquia (8-12 units)

European History Primary Field (8 units)

HIST 209 and HIST 211 may be repeated for credit

- HIST 209 - Colloquium in Ancient and Medieval Europe 4 unit(s) (GWAR)
- HIST 211 - Advanced Colloquium in Modern Europe 4 unit(s) (GWAR)

United States History Primary Field (12 units)

- HIST 210A - Advanced Colloquium United States History 4 unit(s)
- HIST 210B - Advanced Colloquium United States History 4 unit(s) (GWAR)
- HIST 210C - Advanced Colloquium United States History 4 unit(s)

World History Primary Field (8 units)

- HIST 220 - Advanced Colloquium in World History 4 unit(s) (*HIST 220 may be repeated for credit*)

Seminars (8 units)

Graduate or Upper Division courses selected in consultation with the Graduate Advisor.

Additional Graduate or Upper Division Courses (8-12 units)

Total Units Required (30 units)

Elective courses must be planned in consultation with the Graduate Advisor.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 8.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU Cumulative grade point averages of 3.0 in order to graduate.

Justice Studies, MS

- Admission Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (33 units)
- Program Learning Outcomes

The Department of Justice Studies at San José State University offers a full-time two-year or part-time three-year Master's program drawing upon criminology, criminal justice, sociology, political science, psychology, law, and history.

Areas of teaching and research in the Department include theory, policing, law and society, human rights, policy evaluation, juvenile justice, immigration, punishment & society, race theory, history, and forensic science.

The Master's program prepares students for careers in criminal justice settings, public institutions, grassroots community organizations, and nonprofit agencies, as well as for doctoral programs and research positions in public agencies.

More information is available on the Department of Justice Studies website.

Admission Requirements

University Admissions

Applicants must submit a complete graduate application by applying through the CSU Cal State Apply system and meet all the university admission requirements. Applicants apply separately to the department to obtain admission into the MS, Justice Studies program.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For TOEFL requirements, see English Language Proficiency Requirement .

Admission to the Program

To be considered for admission to the Justice Studies Department, applicants must complete the university admission requirements, as well as have a minimum grade point average of 3.0 in the last 60 units of university course work. Admission decisions will be based on a weighted assessment of the applicant's grade point average, course work and preparation, two letters of recommendation from academics, and a short essay on a justice-related topic chosen each year by the Justice Studies graduate committee (see department website for further information).

Admission in Conditionally Classified Standing

Applicants meeting the university's requirements for the Graduate Division but lacking experience in research methods in the social sciences may, at the department's discretion, be required to take one or two classes to prepare them for the degree. These students may be admitted under conditionally classified standing. The individual admission notification will explain the required terms and conditions for attaining Classified standing.

Requirements for Advancement to Candidacy

For advancement to candidacy for the Master of Science degree in Justice Studies, students must meet the general university requirements for advancement to candidacy outlined in this catalog. The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Advancement to Candidacy requires the following:

- Classified standing
- Completion of 9 units of core or required courses with a grade point average of 3.0 ("B") or better

- Completion of the GVAR

Once advanced to candidacy, the student should meet with the department graduate coordinator to draft an approved plan of study. This program must identify 33 units of course work as outlined in the following list of course requirements.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Completing Requirements for the MS - Justice Studies

Course Requirements

Each student must complete a core curriculum of 18 units (JS 201, JS 202, JS 203, JS 207, JS 211 and JS 220), 9 units of elective courses, and master's thesis or project as their 6-unit culminating experience. The thesis option requires six units of JS 299; the project option requires completion of JS 297 and an additional 3-unit elective. Elective courses must be 200-level courses in the department. Subject to graduate coordinator approval, two graduate courses in other departments on campus may be taken as electives, if the student demonstrates their relevance to the student's program of study and/or career goals in Justice Studies. Undergraduate courses may not count toward the 33 units of required graduate course work. Students who are academically or administratively disqualified from the program will generally not be readmitted.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GVAR).

Culminating Experience

Students select one of the following options for their culminating experience. Students should choose the option that best suits their particular interests and goals.

Plan A (with Thesis)

Plan A provides an advanced program of study for those who are primarily interested in conducting research, and pursuing advanced study toward the doctorate. The Plan A is a 6-unit thesis option designed to provide opportunities for in-depth investigation in the student's area of emphasis. The thesis will include original research on a topic approved by the thesis committee and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The student and the thesis committee chair, with approval by the graduate coordinator, determine the thesis requirements and timelines. Approval by the graduate coordinator and thesis committee and a "B" average in the core coursework is required before a student can register for JS 299 (3 units). Students interested in this option must also submit a brief written statement to the graduate coordinator describing their research interests and expertise, and receive permission from the graduate coordinator.

Plan B (Project)

The Plan B option provides an advanced program of study for professionals and those who want to pursue careers in justice studies fields. It requires a 3-unit research project that is conducted with the rigor appropriate to graduate work. Its culminating experience is a substantial, original paper on a specific research topic and an associated poster

presentation evaluated by a faculty panel comprised of all members of the Justice Studies graduate committee. Individual projects are agreed to by the graduate student and JS 297 academic advisor and require the approval of the Graduate Coordinator. Students choosing this option must take an additional 3-unit elective and enroll in JS 297 during their final semester.

Master's Requirements (33 units)

Core Courses (18 units)

- JS 201 - Justice and Social Theory 3 *unit(s)* (GWAR)
- JS 202 - Survey of Research Methods 3 *unit(s)*
- JS 203 - Seminar in Applied Statistics in Justice 3 *unit(s)*
- JS 207 - Seminar in Qualitative Research Methods 3 *unit(s)*
- JS 211 - Historical Issues in Justice Studies 3 *unit(s)*
- JS 220 - Seminar: Criminological Theory 3 *unit(s)*

Electives (9 units)

9 units from the following:

- JS 204 - Justice Organizations, Ethics & Change 3 *unit(s)*
- JS 205 - Seminar in Law and Courts 3 *unit(s)*
- JS 206 - Seminar in Juvenile Justice 3 *unit(s)*
- JS 208 - Seminar: Punishment & Society 3 *unit(s)*
- JS 209 - Seminar in Police and Social Control 3 *unit(s)*
- JS 212 - Local & Global Perspectives on Human Rights 3 *unit(s)*
- JS 214 - Seminar: Social Movement, Community Organizing, and Social Justice 3 *unit(s)*
- JS 218 - Seminar: Immigration, Law & Justice 3 *unit(s)*
- JS 221 - Seminar: Deviance & Social Control 3 *unit(s)*
- JS 223 - Seminar: Comparative Criminology & Criminal Justice 3 *unit(s)*
- JS 281 - Justice Practicum 1-3 *unit(s)*
- JS 298 - Special Study 1-3 *unit(s)*

Culminating Experience (6 units)

Plan A (with Thesis)

- JS 299 - Master's Thesis 3-6 *unit(s)* (6 units required)

Plan B (Project)

- JS 297 - Program Evaluation Project 3 *unit(s)*
- Additional 3 units electives 3 *unit(s)*

Total Units Required (33 units)

Elective courses must be planned in consultation with the graduate advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Psychology, Industrial/Organizational Psychology Concentration, MS

- Admission Requirements
- Degree Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Science (MS) degree in Industrial/Organizational (I/O) Psychology program, offered by the Department of Psychology, is designed to provide students with a fundamental grounding in theory, research, and application in the field of I/O Psychology and to prepare them to work in a wide range of settings including medium-to-large sized organizations, government agencies, human resources or management consulting firms, and large research organizations. The program places particular emphasis on the science-practitioner approach in which students understand and appreciate theory and research as they apply their knowledge and skills to the needs and challenges of organizations.

Admission Requirements

To be eligible for admission into the Industrial/Organizational Psychology program, you must:

- Meet all of the University graduate admissions requirements
- Have completed either a baccalaureate degree (BA/BS) in psychology or any baccalaureate degree and a minimum of 30 semester (45 quarter) units in psychology
- Have a minimum GPA of 3.0 in the last 60 semester units (90 quarter units) of all college and/or university course work
- Have a minimum GPA of 3.0 in all college and/or university psychology courses taken
- Have taken the GRE Exam (General Test only), although we do not require a minimum score for your application to be considered.

Degree Requirements

General university requirements and procedures for completing the Master of Science degree are described in the Academic Regulations section of this catalog. In addition to these, the following departmental requirements must be fulfilled.

- The student must complete a total of not less than 30 semester units for the industrial/organizational concentration as specified in the degree below.
- Candidates in the MS Industrial/Organizational program must complete a thesis or thesis project as part of their 30 semester unit degree requirement. The nature of the thesis is to be determined in consultation with a committee of three committee members. The thesis ordinarily consists of a quantitative investigation. The thesis will generally constitute the final comprehensive examination.
- The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Master's Requirements (30 units)

Core Courses (15 units)

- PSYC 240 - Research Design and Applied Psychometrics 3 unit(s)
- PSYC 249 - Field Work in Industrial/Organizational Psychology 1-6 unit(s) (3 units required)
- PSYC 270 - Seminar in Industrial and Organizational Psychology 3 unit(s) (GWAR)
- PSYC 271 - Seminar in Personnel Psychology 3 unit(s)
- STAT 235 - Multivariate Analysis 3 unit(s)

Electives (9 units)

9 units of department advisor-approved electives

Culminating Experience (6 units)

Complete one course from:

- PSYC 298 - Special Problems 1-6 unit(s)
- PSYC 299 - Master's Thesis 1-6 unit(s)

Total Units Required (30 units)

Psychology, Research and Experimental Psychology Concentration, MA

- Admission Requirements
- Degree Requirements
- Master's Requirements (30 units)
- Program Learning Outcomes

The Master of Arts Program in Psychology, offered by the Department of Psychology, affords its candidates an opportunity for advanced study of psychological theory and research techniques with the following objectives in mind:

- **To ultimately earn a doctorate in psychology** - the course work and experience obtained in the Psychology Program is designed to enhance students' credentials when applying to highly competitive doctoral programs.
- **To succeed in business, industry or a research setting** - our program's emphasis on the mastery of statistical and methodological procedures, research experience, and critical thinking produces graduates that are well suited for many careers in business, government, and/or an array of research settings.

Admission Requirements

To be eligible for admission into our program, you must:

Meet all of the University's graduate admission requirements:

- Have the equivalent of a U.S. baccalaureate degree
- Have completed a minimum of 30 semester units in undergraduate psychology
- Have a minimum GPA of 3.0 in the last 60 semester units (90 quarter units) of all college and/or university course work

- Have a minimum GPA of 3.0 in all college and/or university psychology courses taken

Degree Requirements

General university requirements and procedures for completing the Master of Arts degree are described in the Academic Regulations section of this catalog. In addition to these, the following departmental requirements must be fulfilled.

General Program Requirements

- The student's combined total of approved undergraduate and graduate work in psychology must be at least 60 semester units, including 30 units for the MA Degree Program.
- The student must complete at least 30 approved graduate units. At least 27 of these 30 units must be psychology or statistics units; of the 27, at least 24 must be 200-level courses, i.e., up to six units may be from 100-level courses with the program coordinator's approval.
- The candidate must complete an acceptable thesis. This thesis will be a quantitative investigation of some degree of originality and of publication caliber.
- Satisfactory performance on a final examination is required. This examination may be written, oral or both, as determined by the student's thesis advisory committee. This is typically satisfied through the oral defense of the student's thesis research.
- The University requires that all graduate students complete the Graduation Writing Assessment Requirement (GWAR) as a condition for advancement to candidacy. Courses that satisfy the GWAR are listed in the course requirements for the program.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Thesis Requirement

The thesis serves as the culmination of a student's course work, research experience, and growth as a scholar and scientist. This process is guided closely by a thesis advisor; a tenured or tenure-track faculty member of the Department of Psychology. As the student's ideas develop into a full thesis proposal, a thesis advisory committee is formed to provide further guidance and expertise. Collection of the thesis data begins once the proposal has been approved by the committee and the proper human subjects approval has been obtained. The introduction, analysis, and interpretations of these data will form the core of the student's written master's thesis. These efforts all culminate in an oral presentation and defense before the thesis committee. A detailed statement of thesis policies is available in the Psychology Department Office and on the departmental website.

Master's Requirements (30 units)

Core (12 units)

- PSYC 280 - General Seminar 3 *unit(s)* (GWAR)
- PSYC 220 - Seminar in Experimental Psychology 3 *unit(s)*
- STAT 235 - Multivariate Analysis 3 *unit(s)*
- STAT 245 - Advanced Statistics 3 *unit(s)*

Breadth (12 units)

Complete any four courses from:

- PSYC 200 - Seminar in Personality Theory 3 *unit(s)*
- PSYC 204 - Seminar in Developmental Psychology 3 *unit(s)*
- PSYC 230 - Seminar in Physiological Psychology 3 *unit(s)*
- PSYC 235 - Seminar in Cognitive Psychology 3 *unit(s)*
- PSYC 237 - Psychology of Language 3 *unit(s)*
- PSYC 254 - Social Psychology Seminar 3 *unit(s)*
- PSYC 255 - Seminar in Learning 3 *unit(s)*
- PSYC 256 - Seminar in Perception 3 *unit(s)*

Culminating Experience (6 units)

- PSYC 299 - Master's Thesis 1-6 *unit(s)*
- Elective 3 *unit(s)*

Total Units Required (30 units)

Public Administration, MPA

- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation
- Master's Requirements (36 units)
- Program Learning Outcomes

The program leads to the professional degree of Master of Public Administration (MPA). It provides pre-service students with the knowledge and skills necessary for effective administration of local, state, and federal government agencies and of nonprofit organizations. It also offers mid-career administrators and professionals in public service an opportunity to improve their management skills and qualifications. For the convenience of students who are employed full-time, all courses are offered in the evening. Alumni assist with orientation and mentoring activities.

The MPA program, offered by the Department of Urban and Regional Planning, provides each student with a basic understanding of the environment of public policy and the ability to deal with:

- Political and legal institutions and processes
- Economic and social institutions and processes
- Organization and management concepts, and human resource administration
- Concepts and techniques of budgeting and financial administration
- Application of quantitative and qualitative techniques of analysis in policy and program formulation, implementation and evaluation, and decision making and problem-solving

Students also develop the ability to:

- Define and diagnose public problems, engage in supported decision-making, collect relevant data including big data, perform logical analyses, develop alternatives, implement an effective and ethical course of action, and evaluate results.
- Organize and communicate information clearly to a variety of audiences through formats including oral presentations, written memoranda and technical reports, and statistical charts, graphs, and tables.

- Recognize and value diversity and diverse viewpoints within the community, and integrate diverse views and perspectives into community problem solutions.
- Apply information technology to public administration problems, including community service provision and cybersecurity of systems.

For more information on the program please go to the MPA program's website.

Admissions Requirements

The MPA program accepts students in unclassified and classified standing. People in unclassified standing must meet all admissions requirements, but may be lacking one or more of the prerequisites for the program. These prerequisites must be completed before registering for the fifth MPA course. People admitted in classified standing have met all requirements for admission to the program.

Minimum requirements for admission to the Graduate Division are outlined in the catalog.

The MPA does not use the GRE, as it is not a good predictor of performance especially for people who have been in the professional workforce for several years. The MPA program is primarily designed for working professionals, although well-qualified recent graduates may be admitted.

Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage. For the MPA a minimum score of 575 is required.

Preparation

A bachelor's degree or its equivalent, from an accredited college or university is required. No specific undergraduate major is necessary. Preparation must include introductory courses in American government, micro-economics and statistics from an accredited community college or university, and competency in spreadsheet use. These are known as prerequisites, requirements to be met before beginning the MPA program. Deficiencies in preparation must be removed before advancement to candidacy and before completion of four MPA courses. Transcripts for the baccalaureate, including from all colleges where prerequisites were taken, must be sent directly to Graduate Admissions & Program Evaluation (GAPE) upon applying to the program, not to the department. Transcripts for the missing prerequisites submitted after admission must go to the MPA Director directly.

Grade Point Average (GPA) Requirements

Applicants applying directly after graduating from an undergraduate school need an overall grade point average of 3.0 in all courses, or in the last 60 units as an undergraduate, or in the major. Applicants applying three or more years after completing the BA degree need a grade point average of 2.75 overall, or in the last 60 units of undergraduate courses, or in the major. These are minimum qualifications for consideration, and may not result in admission. In addition, applicants should submit evidence of professional development, such as promotions noted on a resume or in letters of recommendation.

Requirements for Advancement to Graduate Candidacy

Students must apply for advancement to candidacy as early as possible, but no later than the last semester of their graduate program. University requirements for advancement to candidacy for the master's degree are outlined in the Graduate Policies and Procedures section of this catalog.

Final date for submission in each semester may be found at the GAPE Deadlines webpage. In addition to meeting the university requirements for advancement to candidacy, applicants must have submitted an approved program for the degree.

Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR). Within the MPA program, PADM 210 meets the GWAR.

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

This requirement is satisfied by passing PADM 210.

Culminating Experience

Plan A (with Thesis)

A thesis demonstrating the student's competence in original research and acceptable to the department must be submitted to the department at least eight weeks prior to the date on which the degree is to be awarded. This thesis must conform to the SJSU Master's Thesis and Doctoral Dissertation Guidelines and be approved by the Associate Dean of Graduate Studies.

Plan B (with Project)

In lieu of a thesis, a student may complete an academically rigorous research project by enrolling in PADM 298 - Special Problems. In PADM 298 the student will complete a substantial paper under faculty supervision to complete the project component of Plan B.

Master's Requirements (36 units)

Core Courses (15 units)

The courses form a base of knowledge and skills that prepare students for advanced seminars. Students must complete these courses before taking PADM 298.

Complete fifteen units from:

- PADM 210 - Introduction to Public Administration 3 unit(s) (GWAR)
- PADM 212 - Administrative Research Methods 3 unit(s)
- PADM 213 - Policy Analysis and Evaluation 3 unit(s)
- PADM 214 - Introduction to Public Management 3 unit(s)
- PADM 218 - Public Budgeting 3 unit(s)

Advanced Seminars Electives (9-18 units)

Complete three courses from:

- PADM 202 - Regional Governance 3 *unit(s)*
- PADM 215 - Public Personnel Administration 3 *unit(s)*
- PADM 217 - Organizational Theory 3 *unit(s)*
- PADM 219 - Public Financial Administration 3 *unit(s)*
- PADM 220 - Non-Profit Management 3 *unit(s)*
- PADM 223 - Law and Public Administration 3 *unit(s)*
- PADM 295 - Topics in Public Administration 3 *unit(s)*

Additional Electives (0-9 units)

Depending on thesis or project arrangements, electives may include additional MPA courses

- PADM 281 - Public Administration Internship 3 *unit(s)*
- PADM 284 - Directed Reading 1-3 *unit(s)*
- PADM 297 - Advanced Seminar in Public Management 3 *unit(s)* (or approved 100- or 200-level courses in political science or other departments, up to a maximum of 9 units)

Culminating Experience (3 units)

Complete One Option (Plan A or Plan B):

Plan A (with Thesis) (3 units)

- PADM 299 - Master's Thesis 3 *unit(s)*

Plan B (with Project)

- PADM 298 - Special Problems 3 *unit(s)*

Total Units Required (36 units)

No more than six units of 100-level course work may be applied towards the MPA degree.

No more than six units of transfer credit from other universities may be applied toward the MPA degree.

Students who do not have substantial management work experience related to the curriculum are required to register for PADM 281 and complete an appropriate internship.

Elective courses must be planned in consultation with the Graduate Advisor.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Urban Planning, MUP

- Admissions Requirements
- Requirements for Advancement to Candidacy
- Requirements for Graduation
- Master's Requirements (48 units)
- Program Learning Outcomes

The Master in Urban Planning (MUP) program trains skilled professionals who graduate with a strong education in general planning practice and theory as well as specialized training in planning subfields. The program allows students to develop professional skills in an area of specialization such as Affordable Housing and Community Development Finance, Applications of Technology in Planning, Community Design and Development, Environmental Planning, Real Estate Development, or Transportation and Land Use Planning.

Graduates leave the program prepared with practical skills and theoretical knowledge that they can employ in jobs working to improve the quality of life and economic opportunity for all residents of urban regions as well as improving the quality of the natural environment.

A special mission of the program is to provide planning education opportunities for a diverse student population, including working students who prefer to attend the program on a part-time basis.

The MUP is an accredited professional degree program nationally recognized by the Planning Accreditation Board.

Information about the program and important dates can be obtained at the Department of Urban and Regional Planning website.

Admissions Requirements

Candidates must meet all the university admission requirements. To complete your application, you must submit materials through Cal State Apply. Applicants from countries in which the native language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage.

Materials to be submitted through Cal State Apply:

- Fill out the online application form in Cal State Apply. The Master of Urban Planning (MUP) program at SJSU is listed on the online application form under Urban Planning.
- Domestic Students - Submit one set of official transcripts from all higher educational institutions attended (even those where you did not get a degree) to the Graduate Admissions & Program Evaluation (GAPE) Office. Do not send transcripts to the Department of Urban & Regional Planning.
- International Students - International students are advised to closely follow guidelines for submitting transcripts and any other supporting documents, including demonstrating competence in English, available on the Graduate Program Test Requirement webpage.
- A Statement of Purpose (approximately 1.5 single-spaced typed pages) that indicates how a graduate degree will help you to achieve your career objectives and what motivates you to pursue graduate education in urban planning or geography. This can be the same statement as included in your online application. This statement should indicate which semester you are applying for and your current contact information, including mailing address, phone number, and e-mail address. If you have previously applied to the program and are re-applying, please indicate for which semester you previously applied. A well-written, clearly structured, spell-checked, grammar-checked and carefully proofread Statement of Purpose will make a favorable impression on our Admissions Committee members who read them very carefully. As well, please submit your CV/résumé with your statement.
- Three original signed letters of recommendation from university instructors who taught you or supervisors who managed you in paid or volunteer work. It is highly recommended that at least one letter come from a university instructor. If this is not possible, ask your letter writers to include an evaluation of your writing and analysis skills.

Requirements for Advancement to Candidacy

Students must complete all university requirements for advancement to candidacy for the master's degree as outlined in the Graduate Policies and Procedures in this catalog. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

Graduation Writing Assessment Requirement

At SJSU, students must pass the Graduation Writing Assessment Requirement (GWAR).

Culminating Experience

URBP 298A and URBP 298B are graded on a Credit/No credit (CR/NC) basis. Receiving an NC in URBP 298A or URBP 298B has the following implications:

- An "NC" is the equivalent of failing the class. The "NC" will remain permanently on the student's record, although the student's GPA is not affected by the "NC."
- Students who receive an "NC" in URBP 298A or URBP 298B can enroll again in the class only if there is space available, with the department giving enrollment priority to students who meet the prerequisites and have not previously taken the class.
- Students who receive an "NC" in URBP 298A or URBP 298B will be placed on administrative-academic probation. To return to good standing, a student must re-enroll in the class and receive a grade of "CR."
- Students who receive a second "NC" in URBP 298A or URBP 298B will be disqualified from the MUP program.

Master's Requirements (48 units)

Core Courses (25 units)

- URBP 200 - Seminar on Urban and Regional Planning *4 unit(s) (GWAR)*
- URBP 204 - Quantitative Methods *4 unit(s)*
- URBP 225 - Land Use Planning and Law *4 unit(s)*
- URBP 236 - Urban and Regional Planning Policy Analysis: Tools and Methods *4 unit(s) (GWAR)*
- URBP 241 - Planning Sustainable Cities *2 unit(s)*
- URBP 275G - Geographic Information Systems Overview: Urban Planning Applications *1 unit(s)*
- URBP 295 - Capstone Studio: Community Planning *6 unit(s)*

Electives (17 units)

Seventeen units of coursework chosen from Urban and Regional Planning courses. Students are strongly encouraged to take at least 12 units from within a single MUP specialization. Electives from outside the Urban &

Regional Planning Department (either upper-division undergraduate or graduate courses) may be taken, but must first be approved by the Graduate Advisor.

- URBP 103 - Local Government and Politics 4 *unit(s)*
- URBP 125 - Urban Anthropology 3 *unit(s)*
- URBP 145 - Race, Policy, and Urban Cities 4 *unit(s)*
- URBP 163 - Twentieth Century Urban Design 3 *unit(s)*
- URBP 185 - Environmental Impact Analysis 4 *unit(s)*
- URBP 190 - Advanced Environmental Impact Assessment 4 *unit(s)*
- URBP 205 - Private Development and Urban Planning 3 *unit(s)*
- URBP 206 - Market Analysis, Appraisal, & Finance of Real Estate Development 3 *unit(s)*
- URBP 208 - Urban Real Estate Development Studio 3 *unit(s)*
- URBP 223 - Housing Economics and Policy 4 *unit(s)*
- URBP 226 - Regional Transportation Planning 4 *unit(s)*
- URBP 231 - Urban Design in Planning 4 *unit(s)*
- URBP 232 - Urban Design Studio 4 *unit(s)*
- URBP 233 - Social Issues in Planning 4 *unit(s)*
- URBP 240 - Environmental Planning 4 *unit(s)*
- URBP 248 - Spatial Visualization Tech in Urb Plan 1-4 *unit(s)*
- URBP 250 - Urban Planning Public Finance 4 *unit(s)*
- URBP 255 - Urban and Regional Growth Management 4 *unit(s)*
- URBP 256 - Sustainable Transportation Planning 4 *unit(s)*
- URBP 260 - Environmental Planning Topics 4 *unit(s)*
- URBP 275 - Urban Planning Topics 1-4 *unit(s)*
- URBP 276 - Social Media in Planning 1-4 *unit(s)*
- URBP 278 - Introduction to GIS for Urban Planning 4 *unit(s)*
- URBP 279 - Advanced GIS for Urban Planning 4 *unit(s)*
- URBP 280 - Planning Research Topics 1-4 *unit(s)*

Culminating Experience (6 units)

- URBP 298A - Special Study: Planning Report 3 *unit(s)*
- URBP 298B - Special Study: Planning Report Completion 3 *unit(s)*

Total Units Required (48 units)

All electives must be 100-level or 200-level courses as arranged and approved in conference with the Graduate Advisor advisor. Electives to be taken will depend on the student's background and interests.

Students must earn a "B" or better grade in 100-level classes in order for the department to give credit for those classes towards the MUP degree.

The maximum number of upper-division undergraduate units that can be applied toward the master's degree is 15.

Upon completion of the degree requirements, the student must have achieved minimum candidacy and SJSU cumulative grade point averages of 3.0 in order to graduate.

Basic Certificate(s)

Global Citizenship Certificate

Global Studies at SJSU is an interdisciplinary program that encourages students to look at the world holistically. The tremendous international migrations of people, movements of goods, technology transfers, and mixing of cultures makes it important to study the world as a human community in ways we haven't considered in the past. The program is designed to train future leaders to grapple with some of the most pressing issues of our time, from a global perspective. The focus of our program on studying global issues from multiple perspectives provides students the intellectual foundation and the analytical and communication skills to prepare for careers in government, education, NGOs, international development agencies, international philanthropic organizations, law, consulting, global health organizations, writing, and graduate study. We are the only Global Studies program in the San Francisco Bay Area and one of the few in the CSU system that offers an interdisciplinary program that includes a suite of core courses in Global Studies. Global Studies is a relatively new field and our program is at the leading edge of shaping this field for the future.

Global Citizenship is an interdisciplinary certificate program, offered by the Department of Environmental Studies, intended to assist students and members of the non-student community in understanding the interconnectedness of peoples, genders, cultures, and societies and celebrating the richness of human diversity in a global context. The program complements SJSU's goals of globalizing the campus and graduating students who are globally responsible citizens. Students will examine questions of meaning and value associated with citizenship in today's increasingly connected world. Students will also develop their own understanding of personal, social, and corporate responsibility to the global community. In a rapidly changing world, it is necessary for college students to acquire the knowledge, skills, values, and attitudes to adapt and thrive in the enlarged and evolving global context.

University Basic Certificate Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (15 units)

Lower Division Electives (6 units)

Complete two courses from:

- ANTH 11 - Cultural Anthropology 3 *unit(s)* (D)
- ARTH 70B - Art History, Renaissance to Modern 3 *unit(s)* (C1)
- ARTH 70C - Arts of Asia 3 *unit(s)* (C1)
- COMM 74 - Fundamentals of Intercultural Communication 3 *unit(s)* (E)
- ENGL 40 - Contemporary World Fiction 3 *unit(s)* (C2)
- GEOG 10 - Cultural Geography 3 *unit(s)* (D)
- GEOG 12 - World Regional Geography 3 *unit(s)* (D)
- GLST 1A - Introduction to Global Studies 3 *unit(s)*
- HIST 1A - World History to 1500 3 *unit(s)*
- HIST 1B - World History from 1500 3 *unit(s)*

- MUSC 19 - Music in World Cultures 3 *unit(s)* (C1)
- POLS 2 - Introduction to Comparative Politics 3 *unit(s)* (D)
- POLS 4 - Introduction to International Relations 3 *unit(s)* (D)
- RELS 70 - Gods, Guns, Gurus, Grails-World Religion 3 *unit(s)* (C2)

Upper Division Electives (6 units)

Note: Students who have not satisfied the prerequisites for SJSU Studies will select the 3 courses that are not SJSU Studies Courses. Alternatively those students may wait to satisfy this requirement until completion of SJSU Studies prerequisites.

Complete two courses from:

- GLST 143 - Gender, Power, Intl Dev 3 *unit(s)* (V)
- GLST 156 - Technology of the Modern World 3 *unit(s)*
- GLST 162 - Contemporary Global Issues 3 *unit(s)*
- GLST 164 - Advanced Seminar in Global Citizenship 3 *unit(s)*
- GLST 167 - Changing Ecologies of Globalization 3 *unit(s)* (R)
- HIST 155 - 20th Century World 3 *unit(s)* (V)

Additional Requirements (3 units)

Note: Students may take GLST 189 either for a volunteer or internship abroad or for working with a local community with approval of the Global Studies advisor. A semester abroad or FLP summer class may also be substituted for this requirement.

Complete one course from:

- GLST 188 - Special Topics in International Experiences 3 *unit(s)* (V)
- GLST 189 - Global Experience 1-3 *unit(s)*

Total Units Required (15 units)

Advanced Certificate(s)

Advanced Certificate in Geographic Information Systems (GIS) Certificate

The Advanced Certificate in Geographic Information Systems (GIS) Certificate is offered by the Department of Urban and Regional Planning.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Prerequisite (4 units)

- GEOG 70 - Introduction to Geographic Information Systems 4 *unit(s)*

Certificate Requirements (16 units)

- GEOG 171 - Advanced Geographic Information Systems 4 *unit(s)*
- GEOG 290 - Seminar in Research Design for Geographic Information Science 3 *unit(s)* (GWAR)
- Advisor-approved 100- or 200-level elective 3 *unit(s)*

Complete One Course From:

- GEOG 239 - Geographic Information Technology 3 *unit(s)*
- GEOG 279 - Geographic Information Science Applications 3 *unit(s)*

Complete One Course From:

- GEOG 282 - Advanced Geographic Techniques 3 *unit(s)*
- URBP 279 - Advanced GIS for Urban Planning 4 *unit(s)*

Total Units Required (16 units)

Affordable Housing and Community Development Finance Certificate

In this certificate program, offered by the Department of Urban and Regional Planning, students gain domain-specific knowledge as well as a deep understanding of interrelationships between urban & regional development, housing markets (especially affordable housing market), and financing of public infrastructure and services.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Core (12 units)

- URBP 223 - Housing Economics and Policy 4 *unit(s)*
- URBP 225 - Land Use Planning and Law 4 *unit(s)*
- URBP 250 - Urban Planning Public Finance 4 *unit(s)*

Electives (3-4 units)

Complete one course from:

- URBP 205 - Private Development and Urban Planning 3 *unit(s)*
- URBP 255 - Urban and Regional Growth Management 4 *unit(s)*
- PADM 220 - Non-Profit Management 3 *unit(s)*

Total Units Required (15-16 units)

Applications of Technology in Planning Certificate

In this certificate program, offered by the Department of Urban and Regional Planning, students develop their knowledge and skills at using information technologies in the planning process. Classes and studies draw on the rich agglomeration of technical applications and skills available in the Silicon Valley region.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Core Courses (8 units)

- URBP 225 - Land Use Planning and Law 4 *unit(s)*
- URBP 278 - Introduction to GIS for Urban Planning 4 *unit(s)*

Electives (1-4 units)

Complete one course from:

- URBP 232 - Urban Design Studio 4 *unit(s)*
- URBP 248 - Spatial Visualization Tech in Urb Plan 1-4 *unit(s)*
- URBP 276 - Social Media in Planning 1-4 *unit(s)*
- URBP 279 - Advanced GIS for Urban Planning 4 *unit(s)*

Total Units Required (9-12 units)

Community Design and Development Certificate

In this certificate program, offered by the Department of Urban and Regional Planning, students gain the knowledge and skills required to address a community's needs through the design of the physical environment. Courses examine the interactions among social, economic, political, and cultural factors, and the built environment.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Core Courses (8 units)

- URBP 225 - Land Use Planning and Law 4 *unit(s)*
- URBP 231 - Urban Design in Planning 4 *unit(s)*

Electives (1-6 units)

Complete one courses from:

- URBP 232 - Urban Design Studio 4 *unit(s)*
- URBP 233 - Social Issues in Planning 4 *unit(s)*
- URBP 248 - Spatial Visualization Tech in Urb Plan 1-4 *unit(s)*
- URBP 255 - Urban and Regional Growth Management 4 *unit(s)*
- URBP 295 - Capstone Studio: Community Planning 6 *unit(s)*

Total Units Required (9-14 units)

Environmental Planning Certificate

In this certificate program, offered by the Department of Urban and Regional Planning, students develop the knowledge and skills needed to successfully carry out planning and development activities with consideration of the environmental impacts and a goal to achieve more sustainable development.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Core (8 units)

- URBP 225 - Land Use Planning and Law 4 *unit(s)*
- URBP 240 - Environmental Planning 4 *unit(s)*

Electives (4 units)

Complete one course from:

- URBP 185 - Environmental Impact Analysis 4 *unit(s)*
- URBP 260 - Environmental Planning Topics 4 *unit(s)*

Total Units Required (12 units)

Real Estate Development Certificate

In this certificate program that is offered by the Department of Urban and Regional Planning, students develop the knowledge and skills needed to initiate, navigate, and manage real estate development projects, with a special emphasis on Northern California.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (13 units)

- URBP 205 - Private Development and Urban Planning *3 unit(s)*
- URBP 206 - Market Analysis, Appraisal, & Finance of Real Estate Development *3 unit(s)*
- URBP 208 - Urban Real Estate Development Studio *3 unit(s)*
- URBP 225 - Land Use Planning and Law *4 unit(s)*

Total Units Required (13 units)

Transportation and Land Use Planning Certificate

In this certificate program that is offered by the Department of Urban and Regional Planning, students learn the principles of transportation and land-use planning at the location and regional levels. In today's rapidly growing regions, planners recognize that transportation and land use planning are intricately connected. They must be planned together to allow residents and freight carriers to access destinations quickly and efficiently, improve accessibility options for residents who cannot or choose not to drive, and build economically and environmentally sustainable communities.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an

accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Core (8 units)

- URBP 225 - Land Use Planning and Law 4 *unit(s)*
- URBP 226 - Regional Transportation Planning 4 *unit(s)*

Electives (4 units)

Complete one course from:

- URBP 250 - Urban Planning Public Finance 4 *unit(s)*
- URBP 255 - Urban and Regional Growth Management 4 *unit(s)*
- URBP 256 - Sustainable Transportation Planning 4 *unit(s)*

Total Units Required (12 units)

Spartan Accelerated Graduate Education (SAGE) Scholars

Spartan Accelerated Graduate Education (SAGE) Programs programs are combined bachelor's and master's programs at SJSU (per University Policy F19-1). Sometimes they may also satisfy the requirements for a credential. Students in these programs pursue a bachelor's and master's degree simultaneously. These program allow students to earn graduate credit while in their junior and/or senior year, reducing the number of semesters required for completion of a master's degree.

African American Studies, BA + Single Subject Credential in Social Science + Teaching, MAT

- Admissions Requirements
- Graduate Standing Requirements
- Program Requirements (149 units)
- Advising Roadmap

This Spartan Accelerated Graduate Education (SAGE) Scholars Program prepares students to teach History, Social Science, and Ethnic Studies in California public high schools. The Department of African American Studies provides an interdisciplinary curriculum and comprehensive liberal arts education by training students to appreciate diversity and multicultural American society. As juniors, African American Studies, BA majors are eligible to apply for a SAGE Scholars program that allows them to be concurrently enrolled in the Single Subject Credential - Social Science and Teaching, MAT programs (with an optional Spanish bilingual authorization) as an undergraduate. This combined degree pathway can be completed in five years.

To add a Spanish Bilingual Authorization to this pathway, students simultaneously apply to the Critical Bilingual Authorization program (CBAP). This requires an additional personal essay in their SAGE Scholars application and an interview in Spanish. CBAP students take one credential course in Spanish (EDTE 208B instead of EDTE 208) and take specified sections of several other credential courses. They do their student teaching in bilingual classrooms and are required to register for 2 seminars of EDTE 297B - Advanced Issues in Bilingual Education (2 units) during their student teaching semesters, for an additional 4 units.

Total SAGE Program Units (BA + Credential + MAT) 149

For more information, contact the **Program Coordinator** Travis Boyce.

Admissions Requirements

Most native and transfer students will become eligible to apply for the SAGE Scholars program in the Fall semester of Year 3 and enter the pathway during the Spring semester of Year 3. Applications will be processed by the Department of Teacher Education and without an application fee. Students will not need to apply formally for graduate admission if accepted into this program.

- Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program.
- Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (GWAR) prior to admission into the program.
- Students must have a minimum 2.75 cumulative GPA at the time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher. Note that this is a higher GPA standard than other SAGE Scholars programs.
- Students must meet the Teaching, MAT and Single Subject Credential admissions requirements.

Students who have reached up to their first semester as classified seniors will remain eligible for entry into the SAGE program. Second semester, senior-level students enrolled in the term they expect to graduate from their baccalaureate degree are not eligible to enter into the SAGE program as these students will not gain the accelerated graduate-level benefit offered through the SAGE blended program option.

Graduate Standing Requirements

Continuation requirements: SAGE Scholars must meet the same requirements to remain in the undergraduate and graduate programs as students in traditional pathways. Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Successfully complete 9 units of graduate coursework in the Secondary Education program;
- Maintain GPA of 3.0 or higher;

- Demonstrate aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments;
 - Meet with a graduate advisor to plan a formal course of study. The MAT degree approved programs are individually designed to meet specific student objectives;
 - To enter student teaching, students must have completed the Subject Matter Competency requirements (CSETs or Subject Matter Competency waiver, if applicable);
 - To convert to graduate status, students must have completed their 45 hours of pre-professional service in a public school setting: 25(+) in the secondary subject area and up to 20 hours any work with youth;
 - To convert to graduate status, students must have completed all *lower-division* work (including lower and upper-division general education courses and American Institutions courses); and,
 - The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.
 - Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: American Institutions and GE Areas D and F. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units unless they are listed in the University Electives section of the major.
- Graduation requirements: SAGE Scholars must meet the same undergraduate graduation requirements as African American Studies majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE Scholars must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (149 units)

African American Studies, BA (103 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (35 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass the 100W course with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B, C, E 30 *unit(s)*
- Any Social Sciences 100W (recommend AFAM 100W) 3 *unit(s)*
- Physical Education 2 *unit(s)*

Major Requirements (51 units)

Lower Division Requirements (15 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)
- AFAM 22 - The Humanities in African American Culture 3 *unit(s)* (F)
- AFAM 40 - African Origins **OR** AFAM 111 - African Nations: History, Politics, and Culture 3 *unit(s)*
- HIST 99 - History Fundamentals 3 *unit(s)* (*Teacher Preparation*)

Upper Division Requirements (18 units)

- CCS 185 - Teaching in a Diverse Society 3 unit(s) (Teacher Preparation)
- AFAM 134 - The Black Civil Rights Movements 3 unit(s) (F)
- AFAM 151 - Race, Class and the Environment 3 unit(s) (R eff Spring 2025)
- AFAM 152 - Black Feminisms 3 unit(s) (S)
- SOCS 138 - US History for Teachers 3 unit(s) (S) (Teacher Preparation)
- SOCS 139 - World History for Teachers 3 unit(s) (V) (Teacher Preparation)

Major Electives (18 units)

Complete six courses from:

- AFAM 102 - Black Music 3 unit(s)
- AFAM 105 - Race and Health Inequities in the US 3 unit(s)
- AFAM 106 - Black Diasporas 3 unit(s)
- AFAM 110 - Race and Education in the US 3 unit(s)
- AFAM 112 - Black Immigrant Communities 3 unit(s)
- AFAM 115 - The Great Migration and Black Communities 3 unit(s)
- AFAM 120 - Sociology of Black Communities 3 unit(s)
- AFAM 125 - Black Kinship in the US - Black Families Past and Present 3 unit(s)
- AFAM 130 - Black Perspectives in Psychology - Black Psychology 3 unit(s)
- AFAM 137 - Introduction to Black Religion 3 unit(s)
- AFAM 142 - Race, Justice, and the Legal System 3 unit(s)
- AFAM 145 - Race, Policy, and Urban Cities 4 unit(s)
- AFAM 156 - Black Women's Writing 3 unit(s)
- AFAM 157 - Race, Tech, and Global Futures 3 unit(s)
- AFAM 158 - Race, Sport, Activism & Social Movements 3 unit(s) (F)
- AFAM 159 - The Racial Wealth Gap in America 3 unit(s) (S)
- AFAM 160 - Black Political Power in the US 3 unit(s)
- AFAM 161 - Black Representations in Media and New Technology 3 unit(s)
- AFAM 162 - The Aesthetics of Hip-Hop 3 unit(s) (F)
- AFAM 165 - Topics in Ethnic American Literature 4 unit(s)
- AFAM 166 - Black Women's Histories 3 unit(s)
- AFAM 170 - Interracial Intimacies and Mixed Race Identity in the U.S. 3 unit(s) (S)
- AFAM 180 - Individual Studies 1-4 unit(s)
- AFAM 184 - Directed Reading 1-4 unit(s)
- AFAM 185 - Special Topics in African American Studies 3 unit(s)
- AFAM 190 - Internship in Community Development 1-4 unit(s)
- AFAM 198 - Senior Seminar in African American Studies 3 unit(s)
- AFAM 298 - Special Studies 1-6 unit(s)

Subject Matter Competency Coursework or CSET + University Electives (17 units)

There is currently no CSET waiver program for the African American Studies BA. SAGE. Students must fulfill Social Science subject matter competency (SMC):

- Path Option 1: Students can take the following courses (17 units)
- SOCS 137 - California History for Teachers 3 units OR HIST 189A - California History to 1900 4 units (US3)
- POLS 101 - American Government for Teachers 3 units OR POLS 15 - Essentials of U.S. & California Government 3 units (D+US23)
- ECON 109 - Analysis of Economic Issues for Teachers 3 units OR ECON 1A - Principles of Economics: Macroeconomics 3 units

- Upper Division course in US History* 3 units
- Upper Division course in World History** 3 units
- University Electives 2 units
- Path Option 2: Students can take all three Social Science CSETs (California Subject Examinations for Teachers)*** and 17 units of University Electives.

Teaching, MAT + Single Subject Credential in Social Science (46 units)

Upon completion of the MAT and credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in order to be recommended for a credential. Completion of the MAT also requires a minimum grade of "C" in all courses taken and a minimum overall GPA of 3.0.

- EDTE 208 - Educational Sociology 3 unit(s)
- EDTE 224 - Seminar in Educational Psychology 3 unit(s) (*Multicultural Foundations*)
- EDTE 250 - Qualitative Research in Education 3 unit(s) (*Research Core*) (GWAR)
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 unit(s)
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 unit(s)
- EDTE 282 - Assessment and Evaluation 3 unit(s)
- EDTE 294 - Research/Practices in Health and Special Education 3 unit(s)
- EDTE 297C - CalTPA Support 1 unit(s)
- EDSC 184P - Introduction to Student Teaching 1 unit(s)
- EDSC 184X - Student Teaching I 6 unit(s) (6 units required)
- SSED 184Y - Student Teaching II - Classroom Teaching 4 unit(s) (4 units required)
- SSED 184Z - Student Teaching III - Classroom Teaching 4 unit(s) (4 units required)
- SSED 378 - Social Science Methods 3 unit(s)

Culminating Experience (6 units)

Students must satisfy the culminating experience requirement by completing Plan B (Project), and a **presentation on the same at the department's colloquium**, which is held near the end of each fall and spring semester.

Plan A (Thesis): Write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. Thesis proposals must be approved by the graduate committee, which is made up of two department faculty and a third faculty member from outside the department. Students enroll in:

- EDTE 299 - Master's Thesis

Plan B (Project): Complete a master's project report. A project is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized in a report that includes the project's significance, objectives, methodology and a conclusion or recommendation. Students enroll in:

- EDTE 298 - Special Studies in Education

Spanish Bilingual Authorization: Complete student teaching (EDSC 184X/SCED 184Y/SCED 184Z) in Spanish bilingual classrooms and attend an extra seminar session in these student teaching classes; and take the following courses in Spanish: EDTE 208, and EDTE 262.

Total Units Required (149 units)

Students must complete a minimum of 120 units to satisfy the bachelor's degree and a minimum of 30 units to satisfy the master's degree. In order to satisfy these requirements, 17 units of the credential count towards the bachelor's degree and 20 units of the credential count towards the master's degree.

*Courses that fulfill the requirement for Upper Division US History

- HIST 171 - U.S. Constitutional & Legal History
- HIST 173 - New World Encounters, 1400-1750
- HIST 174 - Colonial & Revolutionary America
- HIST 175 - Inventing America, 1800-1860
- HIST 176 - The Civil War and Reconstruction
- HIST 177 - Industrial America, 1877-1920
- HIST 178 - Crash, Depression and War, 1920-1950
- HIST 179 - Cold War America, 1950-Present
- HIST 181 - Advanced Topics in American History
- HIST 185 - LGBTQ+ History in the United States
- HIST 188 - History of Women in the United States

**Courses that fulfill the requirement for Upper Division World History

- HIST 104 - Advanced Topics in Ancient History
- HIST 109A - History of China
- HIST 109B - History of China
- HIST 110A - History of Japan
- HIST 110B - History of Japan
- HIST 112 - Ancient West to 500 BCE
- HIST 114 - The Ancient West, 500 BCE-400 CE
- HIST 121A - Medieval Worlds, 400-1000
- HIST 121B - Medieval Worlds, 1000-1500
- HIST 124 - Early Modern Europe
- HIST 126 - Advanced Topics in Medieval History
- HIST 132 - Advanced Topics in World History
- HIST 143 - Europe, 1750-1900
- HIST 144 - Europe, 1900-1945
- HIST 145 - Europe and the World Since 1945
- HIST 146 - Advanced Topics in European History
- HIST 155 - 20th Century World
- HIST 162 - Colonial Latin America
- HIST 163 - Modern Latin America, 1800-Present
- HIST 167 - Advanced Topics in Latin American History
- HIST 173 - New World Encounters, 1400-1750

***Social Science CSETs

- CSET I - World History
- CSET II - United States History
- CSET III - Principles of American Democracy; Principles of Economics; California History

Chicana and Chicano Studies, BA + Single Subject Credential in Social Science + Teaching, MAT

This Spartan Accelerated Graduate Education (SAGE) Program prepares students to teach History, Social Science, and Ethnic Studies in California public high schools. The Department of Chicana and Chicano Studies provides

an interdisciplinary curriculum that trains undergraduate students in Social Science-based methodologies and critical pedagogies of the Humanities and Arts to foster comprehensive knowledge of the diversity and multiculturalism intrinsic to American society. As juniors, Chicana and Chicano Studies, BA majors are eligible to apply for a SAGE Scholars program, which allows them to be concurrently enrolled in the Single Subject Credential - Social Science and Teaching, MAT programs (with an optional Spanish bilingual authorization. This combined degree pathway can be completed in five years.

To add a Spanish Bilingual Authorization to this pathway, students simultaneously apply to the Critical Bilingual Authorization program (CBAP). This requires an additional personal essay in their SAGE Scholars application and an interview in Spanish. CBAP students take one credential course in Spanish (EDTE 208B instead of EDTE 208) and take specified sections of several other credential courses. They also complete their student teaching in bilingual classrooms and are required to register for 2 seminars of EDTE 297B - Advanced Issues in Bilingual Education (2 units) during their student teaching semesters, for an additional 4 units.

Total SAGE Program Units (BA + Credential + MAT) 149

For more information, contact the CCS Department's undergraduate advisor:: Marina Corrales.

Admissions Requirements

Most students who started their undergraduate education at SJSU, as well as transfer students, become eligible to apply for the SAGE program in the Spring semester of Year 3 and enter the pathway during their Fall semester of Year 4. Applications will be processed by the Department of Chicana and Chicano Studies and without an application fee. Students will not need to apply formally for graduate admission if accepted into this program.

- Students must have successfully completed a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of program;
- Students must be enrolled in or have completed the undergraduate Graduation Writing Assessment Requirement (GWAR) prior to admission into the program;
- Students must have a minimum 2.75 cumulative GPA at the time of admission. GPA is calculated by the last 60 semester (or 90 quarter) units taken or a student's cumulative GPA, whichever is higher Note that this is a higher GPA standard than other SAGE Scholars programs;
- Students must meet the Teaching, MAT and Single Subject Credential admissions requirements.

Graduate Standing Requirements

Continuation requirements: SAGE Scholars must meet the same requirements to remain in the undergraduate and graduate programs as students in traditional pathways. Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Successfully complete 9 units of graduate coursework in the Secondary Education program;
- Maintain GPA of 3.0 or higher;
- Demonstrate aptitude for advanced work in professional education as measured by instructor appraisals, evaluation of previous academic work, recommendation by qualified professionals, or other assessments;
- Meet with a graduate advisor to plan a formal course of study. The MAT degree approved programs are individually designed to meet specific student objectives;
- To enter student teaching, students must have completed the Subject Matter Competency requirements (CSETs or Subject Matter Competency waiver, if applicable);

- To convert to graduate status, students must have completed their 45 hours of pre-professional service in a public school setting: 25(+) in the secondary subject area and up to 20 hours any work with youth;
- To convert to graduate status, students must have completed all lower-division work (including lower and upper-division general education courses and American Institutions courses); and,
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: American Institutions and GE Areas D and F. Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units unless they are listed in the University Electives section of the major.

Graduation requirements: SAGE Scholars must meet the same undergraduate graduation requirements as Chicana and Chicano Studies majors, including University and GE requirements, to be conferred the BA. As graduate students, SAGE Scholars must meet all current graduate program requirements. Upon completion of the credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in their graduate work order to be recommended for a credential.

Program Requirements (151 units)

Chicana and Chicano Studies, BA (103 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (38 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass the 100W course with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B, C, E, R 33 *unit(s)*
- Any Social Sciences 100W 3 *unit(s)*
- Physical Education 2 *unit(s)*

Major Requirements (52 units)

Lower Division Requirements (10 units)

- CCS 1 - Introduction to Chicana and Chicano Studies 3 *unit(s)* (F)
- CCS 2 - Library Studies 1 *unit(s)*
- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

Upper Division Requirements (21 units)

- CCS 125 - Chicana/o Community Studies 3 *unit(s)*
- CCS 135 - Contemporary Chicana/o Issues 3 *unit(s)*
- CCS 150 - Research Methods 3 *unit(s)*
- CCS 151 - Theory in Chicana/o Studies 3 *unit(s)*
- CCS 190 - Chicana and Chicano Studies Capstone 3 *unit(s)*
- SOCS 138 - US History for Teachers 3 *unit(s)* (S) (*Teacher Preparation*)
- SOCS 139 - World History for Teachers 3 *unit(s)* (V) (*Teacher Preparation*)

Additional Upper Division Courses (21 units)

All Majors will select a specific specialization area and will take 9 units in that area and 6 units in each of the other two areas for a total of 21 units.

Cultural and Creative Expression

- CCS 144 - Chicana/o Literature 3 *unit(s)*
- CCS 145 - Chicana/o Folklife and Popular Culture 3 *unit(s)*
- CCS 147 - Music in Mexican America 3 *unit(s)*
- CCS 152 - The Story of Chicano Spanish 3 *unit(s)*
- CCS 170 - Chicana/Chicano Film 3 *unit(s)*

Institutions and Community Engagement

- CCS 115 - Chicana/o Families 3 *unit(s)*
- CCS 127 - Chicanas/os and the Criminal Justice System 3 *unit(s)*
- CCS 185 - Teaching in a Diverse Society 3 *unit(s)*

Transnationalism and Global Relations

- CCS 105 - Chicanos: United States/Mexico Relations 3 *unit(s)*
- CCS 120 - Political Economy and Chicana/o Communities 3 *unit(s)*
- CCS 175 - Human Migrations: Global Reach 3 *unit(s)*

Subject Matter Competency Coursework or CSET + University Electives (15 units)

There is currently no CSET waiver program for the Chicana and Chicano Studies BA. SAGE. Students must fulfill Social Science subject matter competency (+ optional CSET LOTE for the bilingual authorization) by the beginning of student teaching (EDSC 184X). There are two paths to fulfill Social Science subject matter competency:

- Path Option 1: Students can take the following courses (15 units)
- SOCS 137 - California History for Teachers 3 *units* OR HIST 189A - California History to 1900 4 *units* (US3)
- POLS 101 - American Government for Teachers 3 *units* OR POLS 15 - Essentials of U.S. & California Government 3 *units* (D+US23)
- ECON 109 - Analysis of Economic Issues for Teachers 3 *units* OR ECON 1A - Principles of Economics: Macroeconomics 3 *units*
- Upper Division course in US History* 3 *units*
- Upper Division course in World History** 3 *units*
- Path Option 2: Students can take all three Social Science CSETs (California Subject Examinations for Teachers)*** and 15 units of University Electives.

Teaching, MAT + Single Subject Credential in Social Science (46 units)

Upon completion of the MAT and credential requirements, students must have achieved a SJSU cumulative grade point average of 3.0 in order to be recommended for a credential. Completion of the MAT also requires a minimum grade of "C" in all courses taken and a minimum overall GPA of 3.0.

- EDSC 184P - Introduction to Student Teaching 1 *unit(s)*
- EDTE 208 - Educational Sociology 3 *unit(s)*
- EDTE 224 - Seminar in Educational Psychology 3 *unit(s)* (Multicultural Foundations)
- EDTE 250 - Qualitative Research in Education 3 *unit(s)* (Research Core) (GWAR)
- EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy 3 *unit(s)*
- EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners 3 *unit(s)*
- EDTE 282 - Assessment and Evaluation 3 *unit(s)*
- EDTE 294 - Research/Practices in Health and Special Education 3 *unit(s)*
- EDTE 297C - CalTPA Support 1 *unit(s)*
- EDSC 184X - Student Teaching I 6 *unit(s)* (6 *units* required)
- SSED 184Y - Student Teaching II - Classroom Teaching 4 *unit(s)* (4 *units* required)
- SSED 184Z - Student Teaching III - Classroom Teaching 4 *unit(s)* (4 *units* required)
- SSED 378 - Social Science Methods 3 *unit(s)*

Culminating Experience (6 units)

Students must satisfy the culminating experience requirement by completing Plan B (Project), and a presentation on the same at the department's colloquium, which is held near the end of each fall and spring semester.

Plan A (Thesis): Write a master's thesis. The thesis will include original research on a topic approved by the thesis committee, and must meet university requirements as stipulated in this catalog and in the SJSU Master's Thesis and Doctoral Dissertation Guidelines. The thesis identifies the problem, states the major assumptions, explains the significance of the undertaking, sets forth the sources for and methods of gathering information, analyzes the data, and offers a conclusion or recommendation. Thesis proposals must be approved by the graduate committee, which is made up of two department faculty and a third faculty member from outside the department. Students enroll in:

- EDTE 299 - Master's Thesis

Plan B (Project): Complete a master's project report. A project is a significant undertaking that evidences originality and independent thinking, appropriate form and organization, and a rationale. It is described and summarized in a report that includes the project's significance, objectives, methodology and a conclusion or recommendation. Students enroll in:

- EDTE 298 - Special Studies in Education

Spanish Bilingual Authorization: Complete student teaching EDSC 184X/SCED 184Y/SCED 184Z) in Spanish bilingual classrooms and attend an extra seminar session in these student teaching classes; and take the following courses in Spanish: CCS 185, EDTE 208, and EDTE 262.

Total Units Required (151 units)

Students must complete a minimum of 120 units to satisfy the bachelor's degree and a minimum of 30 units to satisfy the master's degree. In order to satisfy these requirements, 17 units of the credential count towards the bachelor's degree and 20 units of the credential count towards the master's degree.

*Courses that fulfill the requirement for Upper Division US History

- HIST 171 - U.S. Constitutional & Legal History
- HIST 173 - New World Encounters, 1400-1750

- HIST 174 - Colonial & Revolutionary America
 - HIST 175 - Inventing America, 1800-1860
 - HIST 176 - The Civil War and Reconstruction
 - HIST 177 - Industrial America, 1877-1920
 - HIST 178 - Crash, Depression and War, 1920-1950
 - HIST 179 - Cold War America, 1950-Present
 - HIST 181 - Advanced Topics in American History
 - HIST 185 - LGBTQ+ History in the United States
 - HIST 188 - History of Women in the United States
- **Courses that fulfill the requirement for Upper Division World History

- HIST 104 - Advanced Topics in Ancient History
- HIST 109A - History of China
- HIST 109B - History of China
- HIST 110A - History of Japan
- HIST 110B - History of Japan
- HIST 112 - Ancient West to 500 BCE
- HIST 114 - The Ancient West, 500 BCE-400 CE
- HIST 121A - Medieval Worlds, 400-1000
- HIST 121B - Medieval Worlds, 1000-1500
- HIST 124 - Early Modern Europe
- HIST 126 - Advanced Topics in Medieval History
- HIST 132 - Advanced Topics in World History
- HIST 143 - Europe, 1750-1900
- HIST 144 - Europe, 1900-1945
- HIST 145 - Europe and the World Since 1945
- HIST 146 - Advanced Topics in European History
- HIST 155 - 20th Century World
- HIST 162 - Colonial Latin America
- HIST 163 - Modern Latin America, 1800-Present
- HIST 167 - Advanced Topics in Latin American History
- HIST 173 - New World Encounters, 1400-1750

***Social Science CSETs

- CSET I - World History
- CSET II - United States History
- CSET III - Principles of American Democracy; Principles of Economics; California History

Economics, BA + Economics, Applied Economics Concentration, MA

The Economics, BA + Economics, Applied Economics Concentration, MA Spartan Accelerated Graduate Education (SAGE) Scholar Program enables qualified students in the Bachelor of Arts in Economics program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BA + MA) 142

For more information, contact the **SAGE Program Coordinator**: Rui Liu.

Admission Requirements

Most students will become eligible to apply for the SAGE program in the Fall semester of their Year 3 and enter the pathway during the Spring semester of Year 4. To be eligible, students must:

- Completed a minimum of 75 units towards the BA degree (but no more than 120 units);
- Completed ECON 101, ECON 102, ECON 103A, and ECON 100W with a grade of B or better in each course;
- Have an institutional or college cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units;
- Completed all lower division GE requirements;
- Completed all lower division courses (1-99);
- Students must submit a personal statement that explains how they arrived at their decision to continue with Economics, Applied Economics Concentration, MA degree.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Students must maintain a GPA of 3.0 or higher, with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters.
- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BA degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the Economics, Applied Economics Concentration, MA degree.

Offramps

For SAGE students who opt out of or fail to complete any portion of the SAGE program, the following will apply:

- Students will be returned to their respective stand-alone undergraduate degree program and allowed to complete the degree.
- All university policies will be followed regarding probation and disqualification.
- Credit earned for graduate coursework and used to complete the Bachelor's degree may not be used to satisfy unit requirements of the Master's degree. Thus, if a student returns to the stand-alone Master's degree, graduate courses already used in the undergraduate degree cannot be used towards the stand alone Master's degree. If the course is required for the program, credit can be given for taking the course, but another course must be substituted to fulfill unit requirements. Subject to University Policy F19-1.
- Credit earned for graduate coursework, and not used towards the undergraduate degree may be counted toward the Master's degree, and shall be available for application to an SJSU graduate program upon subsequent approval by the program and subject to University Policy S17-7, graduate course revalidation.

When a student chooses to opt out or is disqualified from a SAGE program, the process depends on whether the student has fulfilled all requirements for the undergraduate degree. If all requirements are met, the student can proceed to apply for the undergraduate degree. However, if the student has not fulfilled all requirements for the undergraduate degree, any credits earned for graduate coursework that were used to fulfill the undergraduate degree may not be applied toward meeting the unit requirements for the Master's degree. Consequently, the program initiates an Advisor Request to the Registrar's Office, and the student is transitioned back to the regular undergraduate program. During this phase, the advisor collaborates with the student to formulate a plan for completing any remaining undergraduate requirements. Once all prerequisites for the undergraduate degree are fulfilled, the student is eligible to submit an application for the undergraduate degree.

Program Requirements (142 units)

Economics, BA (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Graduation Requirements (47 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ECON 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, A3, B1, B2, B3, C1, C2, D/American Institutions (US123), E, and F 36 *unit(s)*
- SJSU Studies R, S, V 9 *unit(s)*
- Physical Education 2 *unit(s)*

Major Preparation (6 units)

The following courses in Preparation for the Major must be completed with a grade of "C-" or better:

- Any Statistics course 3 *unit(s)* (including SOCI 15 (B4), SOCS 15 (B4), STAT 95 (B4), BUS2 90)
- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (B4)
MATH 71X may be used instead of MATH 71. MATH 30 or MATH 30X also accepted.

Major Requirements (50 units)

All courses required in the major must be completed with a minimum grade of "C-".

Core Courses (26 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)*
- ECON 100W - Writing Workshop: Economic Reports 4 *unit(s)*
- ECON 101 - Microeconomic Analysis 4 *unit(s)*
- ECON 102 - Macroeconomic Analysis 4 *unit(s)*
- ECON 103 - Intro to Econometrics 4 *unit(s)*

Capstone Experience

Complete one course:

- ECON 190 - History of Economic Thought 4 *unit(s)*
- ECON 191 - Economic Thought of Nobel Prize Winners 4 *unit(s)*

Upper Division Economics Electives (24 units)

- ECON 104 - Mathematical Methods for Economics 4 *unit(s)*
Complete two courses from:
- ECON 108 - Cost-Benefit Analysis 4 *unit(s)*
- ECON 113A - Economic History of the United States 4 *unit(s)*

- ECON 121 - Industrial Organization 4 *unit(s)*
- ECON 133 - Public Choice 4 *unit(s)*
- ECON 138 - Business and Economic Forecasting 4 *unit(s)*
- ECON 166 - Urban Economics 4 *unit(s)*
- Complete three additional 100-level ECON courses (except ECON 109)

University Electives (17 units)

A minor in a field recommended by the advisor is encouraged.

Economics, Applied Economics Concentration, MA (22 units)

Core Courses (12 units)

- ECON 201 - Seminar in Microeconomic Analysis 3 *unit(s)*
 - ECON 203A - Economic Research Methods 3 *unit(s)*
 - ECON 205 - Workshop in Economic Analysis 3 *unit(s)*
- Complete one course:*
- ECON 202 - Seminar in Macroeconomic Analysis 3 *unit(s)*
 - ECON 235 - Seminar in Monetary Theory and Policy 3 *unit(s)*

Concentration Requirements (9 units)

- ECON 203B - Seminar in Econometric Methods 3 *unit(s)*
- Complete two courses:*
- ECON 232 - Seminar in Public Finance 3 *unit(s)*
 - ECON 241 - Seminar in Law and Economics 3 *unit(s)*
 - ECON 251 - Seminar in Labor Economics 3 *unit(s)*

Culminating Experience (1 unit)

- ECON 298E - Special Study Comprehensive Exam 1 *unit(s)*

Total Units Required (142 units)

The standalone Economics, Applied Economics Concentration, MA requires completion of ECON 104 and two economics electives. Students satisfy these requirements in this SAGE Scholars Program by taking ECON 104 and two upper division courses as Upper Division Economics Electives. These 12 units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Economics, BA + Economics, MA

The Economics, BA + Economics, MA Spartan Accelerated Graduate Education (SAGE) Scholar Program enables qualified students in the Bachelor of Arts in Economics program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees

in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BA + MA) 142

For more information, contact the **SAGE Program Coordinator**: Rui Liu.

Admission Requirements

Most students will become eligible to apply for the SAGE program in the Fall semester of their Year 3 and enter the pathway during the Spring semester of Year 4. To be eligible, students must:

- Completed a minimum of 75 units towards the BA degree (but no more than 120 units);
- Completed ECON 101, ECON 102, ECON 103A, and ECON 100W with a grade of B or better in each course;
- Have an institutional or college cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units;
- Completed all lower division GE requirements;
- Completed all lower division courses (1-99);
- Students must submit a personal statement that explains how they arrived at their decision to continue with Economics, Applied Economics Concentration, MA degree.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Students must maintain a GPA of 3.0 or higher, with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters.
- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BA degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the applied MA degree.

Offramps

For SAGE students who opt out of or fail to complete any portion of the SAGE program, the following will apply:

- Students will be returned to their respective stand-alone undergraduate degree program and allowed to complete the degree.
- All university policies will be followed regarding probation and disqualification.
- Credit earned for graduate coursework and used to complete the Bachelor's degree may not be used to satisfy unit requirements of the Master's degree. Thus, if a student returns to the stand-alone Master's degree, graduate courses already used in the undergraduate degree cannot be used towards the stand alone Master's degree. If the course is required for the program, credit can be given for taking the course, but another course must be substituted to fulfill unit requirements. Subject to University Policy F19-1.
- Credit earned for graduate coursework, and not used towards the undergraduate degree may be counted toward the Master's degree, and shall be available for application to an SJSU graduate program upon subsequent approval by the program and subject to University Policy S17-7, graduate course revalidation.

When a student chooses to opt out or is disqualified from a SAGE program, the process depends on whether the student has fulfilled all requirements for the undergraduate degree. If all requirements are met, the student can proceed to apply for the undergraduate degree. However, if the student has not fulfilled all requirements for the

undergraduate degree, any credits earned for graduate coursework that were used to fulfill the undergraduate degree may not be applied toward meeting the unit requirements for the Master's degree. Consequently, the program initiates an Advisor Request to the Registrar's Office, and the student is transitioned back to the regular undergraduate program. During this phase, the advisor collaborates with the student to formulate a plan for completing any remaining undergraduate requirements. Once all prerequisites for the undergraduate degree are fulfilled, the student is eligible to submit an application for the undergraduate degree.

Program Requirements (142 units)

Economics, BA (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Graduation Requirements (47 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ECON 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, A3, B1, B2, B3, C1, C2, D/American Institutions (US123), E, and F 36 *unit(s)*
- SJSU Studies R, S, V 9 *unit(s)*
- Physical Education 2 *unit(s)*

Major Preparation (6 units)

The following courses in Preparation for the Major must be completed with a grade of "C-" or better:

- Any Statistics course 3 *unit(s)* (including SOCI 15 (B4), SOCS 15 (B4), STAT 95 (B4), BUS2 90)
- MATH 71 - Calculus for Business and Aviation 3 *unit(s)* (B4) *MATH 71X may be used instead of MATH 71. MATH 30 or MATH 30X also accepted.*

Major Requirements (50 units)

All courses required in the major must be completed with a minimum grade of "C-".

Core Courses (26 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ECON 100W - Writing Workshop: Economic Reports 4 *unit(s)* (WID)
- ECON 101 - Microeconomic Analysis 4 *unit(s)*
- ECON 102 - Macroeconomic Analysis 4 *unit(s)*
- ECON 103A - Introduction to Econometrics and Research Methods 4 *unit(s)*

Capstone Experience

Complete one course:

- ECON 190 - History of Economic Thought 4 *unit(s)*

- ECON 191 - Economic Thought of Nobel Prize Winners 4 unit(s)

Upper Division Economics Electives (24 units)

- ECON 104 - Mathematical Methods for Economics 4 unit(s)
Complete two courses from:
- ECON 108 - Cost-Benefit Analysis 4 unit(s)
- ECON 113A - Economic History of the United States 4 unit(s)
- ECON 121 - Industrial Organization 4 unit(s)
- ECON 133 - Public Choice 4 unit(s)
- ECON 138 - Business and Economic Forecasting 4 unit(s)
- ECON 166 - Urban Economics 4 unit(s)
- Complete three additional 100-level ECON courses (except ECON 109)

University Electives (17 units)

A minor in a field recommended by the advisor is encouraged.

Economics, MA (22 units)

Core Courses (12 units)

- ECON 205 - Workshop in Economic Analysis 3 unit(s)
- ECON 201 - Seminar in Microeconomic Analysis 3 unit(s)
- ECON 203A - Economic Research Methods 3 unit(s) (GWAR)
Complete one course:
- ECON 202 - Seminar in Macroeconomic Analysis 3 unit(s)
- ECON 235 - Seminar in Monetary Theory and Policy 3 unit(s)

Electives (9 units)

- Approved 200-level courses

Culminating Experience (1 unit)

- ECON 298E - Special Study Comprehensive Exam 1 unit(s)

Total Units Required (142 units)

The standalone Economics, MA requires completion of ECON 104 and two economics electives. Students satisfy these requirements in this SAGE Scholars Program by taking ECON 104 and two upper division courses as Upper Division Economics Electives. These 12 units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Economics, BS + Economics, Applied Economics Concentration, MA

- Admission Requirements
- Graduate Standing Requirements
- Program Requirements (142 units)

- Advising Roadmap

The Economics, BS + Economics, Applied Economics Concentration, MA Spartan Accelerated Graduate Education (SAGE) Scholar Program enables qualified students in the Bachelor of Science in Economics program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BA + MA) 142

For more information, contact the **SAGE Program Coordinator**: Rui Liu.

Admission Requirements

Most students will become eligible to apply for the SAGE program in the Fall semester of their Year 3 and enter the pathway during the Spring semester of Year 4. To be eligible, students must:

- Completed a minimum of 75 units towards the BA degree (but no more than 120 units);
- Completed ECON 101, ECON 102, ECON 103A, and ECON 100W with a grade of B or better in each course;
- Have an institutional or college cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units;
- Completed all lower division GE requirements;
- Completed all lower division courses (1-99);
- Students must submit a personal statement that explains how they arrived at their decision to continue with the Economics, Applied Economics Concentration, MA degree.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Students must maintain a GPA of 3.0 or higher, with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters.
- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BA degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.

Offramps

For SAGE students who opt out of or fail to complete any portion of the SAGE program, the following will apply:

- Students will be returned to their respective stand-alone undergraduate degree program and allowed to complete the degree.
- All university policies will be followed regarding probation and disqualification.
- Credit earned for graduate coursework and used to complete the Bachelor's degree may not be used to satisfy unit requirements of the Master's degree. Thus, if a student returns to the stand-alone Master's degree, graduate courses already used in the undergraduate degree cannot be used towards the stand alone Master's degree. If the course is required for the program, credit can be given for taking the course, but another course must be substituted to fulfill unit requirements. Subject to University Policy F19-1.

- Credit earned for graduate coursework, and not used towards the undergraduate degree may be counted toward the Master's degree, and shall be available for application to an SJSU graduate program upon subsequent approval by the program and subject to University Policy S17-7, graduate course revalidation.

When a student chooses to opt out or is disqualified from a SAGE program, the process depends on whether the student has fulfilled all requirements for the undergraduate degree. If all requirements are met, the student can proceed to apply for the undergraduate degree. However, if the student has not fulfilled all requirements for the undergraduate degree, any credits earned for graduate coursework that were used to fulfill the undergraduate degree may not be applied toward meeting the unit requirements for the Master's degree. Consequently, the program initiates an Advisor Request to the Registrar's Office, and the student is transitioned back to the regular undergraduate program. During this phase, the advisor collaborates with the student to formulate a plan for completing any remaining undergraduate requirements. Once all prerequisites for the undergraduate degree are fulfilled, the student is eligible to submit an application for the undergraduate degree.

Program Requirements (142 units)

Economics, BS (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Graduation Requirements (47 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ECON 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, A3, B1, B2, B3, C1, C2, D/American Institutions (US123), E, and F 36 unit(s)
- SJSU Studies R, S, V 9 unit(s)
- Physical Education 2 unit(s)

Major Preparation (6 units)

The following courses in Preparation for the Major must be completed with a grade of "C" or better.

- Any Statistics course 3 unit(s) (including SOCI 15 (B4), SOCS 15 (B4), STAT 95 (B4), BUS2 90)
- MATH 30 - Calculus I 3 unit(s) (B4) MATH 30X may be used instead of MATH 30.

Major Requirements (50 units)

All courses required in the major must be completed with a minimum grade of "C-".

- ECON 1A - Principles of Economics: Macroeconomics 3 unit(s)
- ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D)
- ECON 100W - Writing Workshop: Economic Reports 4 unit(s) (WID)
- ECON 101 - Microeconomic Analysis 4 unit(s)
- ECON 102 - Macroeconomic Analysis 4 unit(s)
- ECON 103A - Introduction to Econometrics and Research Methods 4 unit(s)
- ECON 103B - Econometric Methods 4 unit(s)

- ECON 104 - Mathematical Methods for Economics 4 *unit(s)*

Upper Division Economics Electives (20 units)

Complete two courses from:

- ECON 108 - Cost-Benefit Analysis 4 *unit(s)*
- ECON 113A - Economic History of the United States 4 *unit(s)*
- ECON 121 - Industrial Organization 4 *unit(s)*
- ECON 133 - Public Choice 4 *unit(s)*
- ECON 138 - Business and Economic Forecasting 4 *unit(s)*
- ECON 166 - Urban Economics 4 *unit(s)*
- Complete three additional 100-level ECON courses (except ECON 109)

University Electives (17 units)

A minor in a field recommended by the advisor is encouraged.

Economics, MA (22 units)

Core Courses (12 units)

- ECON 201 - Seminar in Microeconomic Analysis 3 *unit(s)*
- ECON 203A - Economic Research Methods 3 *unit(s)* (GWAR)
- ECON 205 - Workshop in Economic Analysis 3 *unit(s)*

Complete one course:

- ECON 202 - Seminar in Macroeconomic Analysis 3 *unit(s)*
- ECON 235 - Seminar in Monetary Theory and Policy 3 *unit(s)*

Concentration Requirements (9 units)

- ECON 203B - Seminar in Econometric Methods 3 *unit(s)*

Complete two courses:

- ECON 138 - Business and Economic Forecasting 4 *unit(s)*
- ECON 232 - Seminar in Public Finance 3 *unit(s)*
- ECON 241 - Seminar in Law and Economics 3 *unit(s)*
- ECON 251 - Seminar in Labor Economics 3 *unit(s)*

Culminating Experience (1 unit)

- ECON 298E - Special Study Comprehensive Exam 1 *unit(s)*

Total Units Required (142 units)

The standalone Economics, MA requires completion of ECON 104 and two economics electives. Students satisfy these requirements in this SAGE Scholars Program by taking ECON 104 as an Economics, BS Core Course and two upper division courses as Upper Division Economics Electives. These 12 units are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Economics, BS + Economics, MA

- Admission Requirements
- Graduate Standing Requirements
- Program Requirements (142 units)
- Advising Roadmap

The Economics, BS + Economics, MA Spartan Accelerated Graduate Education (SAGE) Scholar Program enables qualified students in the Bachelor of Science in Economics program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BA + MA) 142

For more information, contact the **SAGE Program Coordinator**: Rui Liu.

Admission Requirements

Most students will become eligible to apply for the SAGE program in the Fall semester of their Year 3 and enter the pathway during the Spring semester of Year 4. To be eligible, students must:

- Completed a minimum of 75 units towards the BA degree (but no more than 120 units);
- Completed ECON 101, ECON 102, ECON 103A, and ECON 100W with a grade of B or better in each course;
- Have an institutional or college cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units;
- Completed all lower division GE requirements;
- Completed all lower division courses (1-99);
- Students must submit a personal statement that explains how they arrived at their decision to continue with the Economics, MA degree.

Graduate Standing Requirements

Requirements for program continuation and advancement to candidacy in the graduate program, include:

- Students must maintain a GPA of 3.0 or higher, with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters.
- Meeting every semester with an academic advisor to plan and track coursework and graduate status. Once the BA degree is conferred, students meet every semester with their graduate advisor to plan a formal course of study.
- The proposed graduate program must be approved by the graduate coordinator before the student may be considered a candidate for the MA degree.

Offramps

For SAGE students who opt out of or fail to complete any portion of the SAGE program, the following will apply:

- Students will be returned to their respective stand-alone undergraduate degree program and allowed to complete the degree.

- All university policies will be followed regarding probation and disqualification.
- Credit earned for graduate coursework and used to complete the Bachelor's degree may not be used to satisfy unit requirements of the Master's degree. Thus, if a student returns to the stand-alone Master's degree, graduate courses already used in the undergraduate degree cannot be used towards the stand alone Master's degree. If the course is required for the program, credit can be given for taking the course, but another course must be substituted to fulfill unit requirements. Subject to University Policy F19-1.
- Credit earned for graduate coursework, and not used towards the undergraduate degree may be counted toward the Master's degree, and shall be available for application to an SJSU graduate program upon subsequent approval by the program and subject to University Policy S17-7, graduate course revalidation.

When a student chooses to opt out or is disqualified from a SAGE program, the process depends on whether the student has fulfilled all requirements for the undergraduate degree. If all requirements are met, the student can proceed to apply for the undergraduate degree. However, if the student has not fulfilled all requirements for the undergraduate degree, any credits earned for graduate coursework that were used to fulfill the undergraduate degree may not be applied toward meeting the unit requirements for the Master's degree. Consequently, the program initiates an Advisor Request to the Registrar's Office, and the student is transitioned back to the regular undergraduate program. During this phase, the advisor collaborates with the student to formulate a plan for completing any remaining undergraduate requirements. Once all prerequisites for the undergraduate degree are fulfilled, the student is eligible to submit an application for the undergraduate degree.

Program Requirements (142 units)

Economics, BS (120 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Graduation Requirements (47 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass ECON 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A1, A2, A3, B1, B2, B3, C1, C2, D/American Institutions (US123), E, and F 36 *unit(s)*
- SJSU Studies R, S, V 9 *unit(s)*
- Physical Education 2 *unit(s)*

Major Preparation (6 units)

The following courses in Preparation for the Major must be completed with a grade of "C" or better.

- Any Statistics course 3 *unit(s)* (including SOCI 15 (B4), SOCS 15 (B4), STAT 95 (B4), BUS2 90)
- MATH 30 - Calculus I 3 *unit(s)* (B4) MATH 30X may be used instead of MATH 30.

Major Requirements (50 units)

All courses required in the major must be completed with a minimum grade of "C-".

Core Courses (30 units)

- ECON 1A - Principles of Economics: Macroeconomics 3 *unit(s)*
- ECON 1B - Principles of Economics: Microeconomics 3 *unit(s)* (D)
- ECON 100W - Writing Workshop: Economic Reports 4 *unit(s)* (WID)
- ECON 101 - Microeconomic Analysis 4 *unit(s)*
- ECON 102 - Macroeconomic Analysis 4 *unit(s)*
- ECON 103A - Introduction to Econometrics and Research Methods 4 *unit(s)*
- ECON 103B - Econometric Methods 4 *unit(s)*
- ECON 104 - Mathematical Methods for Economics 4 *unit(s)*

Upper Division Economics Electives (20 units)

Complete two courses from:

- ECON 108 - Cost-Benefit Analysis 4 *unit(s)*
- ECON 113A - Economic History of the United States 4 *unit(s)*
- ECON 121 - Industrial Organization 4 *unit(s)*
- ECON 133 - Public Choice 4 *unit(s)*
- ECON 138 - Business and Economic Forecasting 4 *unit(s)*
- ECON 166 - Urban Economics 4 *unit(s)*
- Complete three additional 100-level ECON courses (except ECON 109)

University Electives (17 units)

A minor in a field recommended by the advisor is encouraged.

Economics, MA (22 units)

Core Courses (12 units)

- ECON 201 - Seminar in Microeconomic Analysis 3 *unit(s)*
- ECON 203A - Economic Research Methods 3 *unit(s)* (GWAR)
- ECON 205 - Workshop in Economic Analysis 3 *unit(s)*

Complete one course:

- ECON 202 - Seminar in Macroeconomic Analysis 3 *unit(s)*
- ECON 235 - Seminar in Monetary Theory and Policy 3 *unit(s)*

Electives (9 units)

- Approved 200-level courses

Culminating Experience (1 unit)

- ECON 298E - Special Study Comprehensive Exam 1 *unit(s)*

Total Units Required (142 units)

The standalone Economics, MA requires completion of ECON 104 and two economics electives. Students satisfy these requirements in this SAGE Scholars Program by taking ECON 104 as an Economics, BS Core Course and two upper division courses as Upper Division Economics Electives. These 12 units are considered to count toward both

the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Justice Studies, BS + MS

The Justice Studies Spartan Accelerated Graduate Education (SAGE) Scholars Program enables qualified students in the Bachelor in Science in Justice Studies program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BS + MS) 141

For more information, contact the **SAGE Scholars Program Coordinator** Ericka Adams.

Admissions Requirements

Most students will become eligible to *apply* for the SAGE program in the Fall semester of their Year 3 and enter the pathway during the Spring semester of Year 4. To be eligible, students must:

- Successfully complete a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of admission into the SAGE program;
- Have completed the undergraduate Graduation Writing Assessment Requirement (Writing in the Disciplines/100W/GWAR) prior to admission into the SAGE program;
- Completion of JS 10 or JS 12 or JS 25;
- Completion of JS 15 or STAT 95;
- Have a cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units;
- Completed all lower division GE requirements;
- Must not be declared in another major;
- 2 academic letters of recommendation addressing the applicant's qualifications and potential for success in the combined SAGE program;
- A 1,250 word, double-spaced essay responding to the following prompt: *Describe and discuss a justice-related issue you see as important to our society and/or particularly relevant to contemporary times. In your essay, you may want to focus on one or more of the following questions: What are the social causes of this issue? What are its historical origins? What explains its persistence? How does it impact the human rights of individuals involved? How is this issue being addressed by our society? Could it be addressed differently? What policy changes would be needed?* (Students should cite and reference any sources used.)

Graduate Standing Requirements

- Students must maintain a GPA of 3.0 or higher, with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters. To advance to candidacy in the graduate program, students must have completed 9 units of graduate coursework in the MS Justice Studies program and have a 3.0 cumulative GPA in all graduate coursework.
- SAGE students must meet the same undergraduate graduation requirements as BS Justice Studies majors, including University and GE requirements, to be conferred the BS. As graduate students, SAGE students must meet all current graduate program requirements including having a cumulative grade point average of 3.0 or higher in their graduate work.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Areas B4 and SJSU Studies

(S and V). Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units unless they are listed in the University Electives section of the major.

Program Requirements (141 units)

Justice Studies, BS (108 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (41 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass JS 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B, C1, C2, D/American Institutions (US123), E, F; SJSU Studies Areas R, V 39 *unit(s)*
- Physical Education (2 *units*)

Major Preparation (6 units)

Complete one course from:

- FS 11 - Survey of Forensic Science 3 *unit(s)*
- JS 10 - Introduction to Justice Studies 3 *unit(s)*
- JS 12 - Introduction to Legal Studies 3 *unit(s)*
- JS 25 - Introduction to Human Rights and Justice 3 *unit(s)* (D)

Statistics Course

Complete one course:

- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (33 units)

Justice Studies Core (21 units)

- JS 100W - Writing Workshop 3 *unit(s)* (WID)
- JS 101 - Critical Issues and Ideas in Justice 3 *unit(s)*
- JS 114 - Research Methods in Justice Studies 3 *unit(s)*
- JS 132 - Race, Gender, Inequality and the Law 3 *unit(s)* (S)
- JS 151 - Criminological Theory 3 *unit(s)*
- JS 171 - Human Rights and Justice 3 *unit(s)* (V)

Complete One Course From:

- FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues 3 *unit(s)*
- JS 189 - Senior Seminar: Contemporary Problems 3 *unit(s)*

Additional Courses (12 units)

Students must complete 12 units from the following areas

Area A: Theory Courses (3-6 units)

Complete three to six units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- JS 103 - Courts and Society 3 *unit(s)*
- JS 153 - Crime and Justice Across the Life Course 3 *unit(s)*
- JS 157 - Deviance and Justice 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)* (*When class topic Area A Theories is offered.*)

Area B: Methodology Courses (0-3 units)

Complete up to three units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- FS 162 - Forensic Science Applications 3 *unit(s)*
- JS 107 - Justice Management and Ethics 3 *unit(s)*
- JS 117 - Qualitative Research Methods 3 *unit(s)*
- JS 131 - Crisis Intervention, Mediation and Restorative Justice 3 *unit(s)*
- JS 143 - Criminal Evidence and Procedure 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)* (*When class topic Area B Methods is offered.*)

Area C: Critical Inquiry Courses (0-3 units)

Complete up to three units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- FS 171 - Forensic Criminology 3 *unit(s)*
- JS 122 - Drugs and Society 3 *unit(s)*
- JS 128 - Punishment, Culture and Society 3 *unit(s)*
- JS 130 - Sexuality & Justice 3 *unit(s)*
- JS 136 - Family and Community Violence 3 *unit(s)*
- JS 144 - Criminal Law 3 *unit(s)*
- JS 146 - Guns and the Law 3 *unit(s)*
- JS 150 - Gender and Crime 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)* (*When class topic Area C Critical Inquiry is offered.*)

Area D: Local, Transnational, Historical Courses (0-3 units)

Complete up to three units from:

- FS 160 - Special Topics in Forensic Science 1-5 *unit(s)*
- FS 170 - Forensic Science in Human Rights Investigations 3 *unit(s)*
- JS 121 - Media and Justice 3 *unit(s)*
- JS 123 - Terrorism, Intelligence, and Security 3 *unit(s)*
- JS 127 - Immigration and Justice 3 *unit(s)*
- JS 129 - International Crime and Deviance 3 *unit(s)*
- JS 137 - Collaborative Response to Family Violence 3 *unit(s)*
- JS 145 - White Collar Crime 3 *unit(s)*
- JS 156 - Gangs, Criminal Syndicates & Justice 3 *unit(s)*
- JS 158 - The Prison Community 3 *unit(s)*
- JS 161 - Introduction to Cybercrime 3 *unit(s)*
- JS 172 - Human Trafficking and Modern Day Slavery 3 *unit(s)*
- JS 173 - Advancing Human Rights Through Diversity, Equity and Inclusion 3 *unit(s)*
- JS 185 - Special Topics in Law and Justice 3 *unit(s)* (*When class topic Area D Local, Transnational, Historical is offered.*)

Area E: Experiential Learning Courses (0-3 units)

Complete up to three units from:

- JS 140 - Record Clearance Project 3 *unit(s)*
- JS 141 - Record Clearance Project Representation 3 *unit(s)*
- JS 142 - Record Clearance Project - Advanced Study and Community Involvement 3 *unit(s)*
- JS 179 - Human Rights Practicum and Seminar 3 *unit(s)*
- JS 180 - Individual Studies 1-3 *unit(s)*
- JS 181 - Internship: Justice Studies 1-6 *unit(s)* (*JS 181 may be taken again for elective credit.*)
- JS 184 - Directed Reading 1-3 *unit(s)*

University Electives (28 units)

A minor is strongly recommended

Justice Studies, MS (33 units)

Core Courses (18 units)

- JS 201 - Justice and Social Theory 3 *unit(s)*
- JS 202 - Survey of Research Methods 3 *unit(s)*
- JS 203 - Seminar in Applied Statistics in Justice 3 *unit(s)*
- JS 207 - Seminar in Qualitative Research Methods 3 *unit(s)*
- JS 211 - Historical Issues in Justice Studies 3 *unit(s)*
- JS 220 - Seminar: Criminological Theory 3 *unit(s)*

Electives (9 units)

Complete 9 units from:

- JS 204 - Justice Organizations, Ethics & Change 3 *unit(s)*
- JS 205 - Seminar in Law and Courts 3 *unit(s)*

- JS 206 - Seminar in Juvenile Justice 3 *unit(s)*
- JS 208 - Seminar: Punishment & Society 3 *unit(s)*
- JS 209 - Seminar in Police and Social Control 3 *unit(s)*
- JS 212 - Local & Global Perspectives on Human Rights 3 *unit(s)*
- JS 214 - Seminar: Social Movement, Community Organizing, and Social Justice 3 *unit(s)*
- JS 218 - Seminar: Immigration, Law & Justice 3 *unit(s)*
- JS 221 - Seminar: Deviance & Social Control 3 *unit(s)*
- JS 223 - Seminar: Comparative Criminology & Criminal Justice 3 *unit(s)*
- JS 281 - Justice Practicum 1-3 *unit(s)*
- JS 298 - Special Study 1-3 *unit(s)*

Culminating Experience (6 units)

Complete Plan A (with Thesis) or Plan B (Project).

Plan A (with Thesis)

- JS 299 - Master's Thesis 3-6 *unit(s)* (6 units required)

Plan B (Project)

- JS 297 - Program Evaluation Project 3 *unit(s)*
- Additional 3 units electives 3 *unit(s)*

Total Units Required (141 units)

The standalone Justice Studies, BS program requires completion of JS 141, JS 142, or JS 181. Students satisfy this requirement in this SAGE Scholars Program by completing JS 220. Additionally, students will satisfy 9 units of Area major electives in this SAGE Scholars Program by completing JS 201, JS 202, and JS 211 in the Justice Studies, MS program. These 12 credits are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees.

Justice Studies, Criminology Concentration, BS + Justice Studies, MS

The Justice Studies Spartan Accelerated Graduate Education (SAGE) Scholars Program enables qualified students in the Bachelor in Science in Justice Studies program to simultaneously complete the requirements for both the baccalaureate and master's degrees. Students can progress from undergraduate to graduate status seamlessly, with a simplified application process and no application fee, and complete both degrees in a year's less time as compared to completing them separately. This will provide significant cost savings to the student.

Total SAGE Program Units (BS + MS) 141

For more information, contact the **SAGE Scholars Program Coordinator**: Ericka Adams.

Admissions Requirements

Most students will become eligible to *apply* for the SAGE program in the Fall semester of their Year 3 and enter the pathway during the Spring semester of Year 4. To be eligible, students must:

- Successfully complete a minimum of 60 undergraduate degree applicable units and not more than 120 undergraduate degree applicable units at the time of admission into the SAGE program;
- Have completed the undergraduate Graduation Writing Assessment Requirement (Writing in the Disciplines/100W/GWAR) prior to admission into the SAGE program;
- Completion of JS 10 or JS 12, or JS 25;
- Completion of JS 15 or STAT 95;
- Have a cumulative GPA of 3.0 or better, or GPA of 3.0 or better in the last 60 semester units;
- Completed all lower division GE requirements;
- Must not be declared in another major;
- 2 academic letters of recommendation addressing the applicant's qualifications and potential for success in the combined SAGE program;
- A 1,250 word, double-spaced essay responding to the following prompt: *Describe and discuss a justice-related issue you see as important to our society and/or particularly relevant to contemporary times. In your essay, you may want to focus on one or more of the following questions: What are the social causes of this issue? What are its historical origins? What explains its persistence? How does it impact the human rights of individuals involved? How is this issue being addressed by our society? Could it be addressed differently? What policy changes would be needed?* (Students should cite and reference any sources used.)

Graduate Standing Requirements

- Students must maintain a GPA of 3.0 or higher, with no individual grade below a C. Students not maintaining these standards will be placed on probation initially, followed by disqualification if the grades are not improved within two semesters. To advance to candidacy in the graduate program, students must have completed 9 units of graduate coursework in the MS Justice Studies program and have a 3.0 cumulative GPA in all graduate coursework.
- SAGE students must meet the same undergraduate graduation requirements as BS Justice Studies majors, including University and GE requirements, to be conferred the BS. As graduate students, SAGE students must meet all current graduate program requirements including having a cumulative grade point average of 3.0 or higher in their graduate work.
- Students are converted to graduate status when they have completed 120 SAGE program-applicable units. The following University Requirements are satisfied with required courses in the major: GE Areas B4 and SJSU Studies (S and V). Alternate courses that may satisfy these requirements are not counted in the calculation of the 120 SAGE program-applicable units unless they are listed in the University Electives section of the major.

Program Requirements (141 units)

Justice Studies, Criminology Concentration, BS (108 units)

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

University Requirements (41 units)

The Lower and Upper Division General Education requirements may be satisfied by coursework outlined below. To satisfy the Graduation Writing Assessment Requirement (GWAR), students must pass JS 100W with a grade of "C" or better ("C-" not accepted).

- GE Areas A, B, C1, C2, D/American Institutions (US123), E, F; SJSU Studies Areas R, V 39 *unit(s)*
- Physical Education (2 *units*)

Major Preparation (6 units)

Complete one course from:

- FS 11 - Survey of Forensic Science 3 *unit(s)*
- JS 10 - Introduction to Justice Studies 3 *unit(s)*
- JS 12 - Introduction to Legal Studies 3 *unit(s)*
- JS 25 - Introduction to Human Rights and Justice 3 *unit(s)* (D)

Statistics Course

Complete one course:

- JS 15 - Introductory Statistics in Justice Studies 3 *unit(s)* (B4)
- STAT 95 - Elementary Statistics 3 *unit(s)* (B4) (UNVS 15 may be used in lieu of the statistics course required by this major.)

Major Requirements (33 units)

Justice Studies Core (21 units)

- JS 100W - Writing Workshop 3 *unit(s)* (WID)
- JS 101 - Critical Issues and Ideas in Justice 3 *unit(s)*
- JS 114 - Research Methods in Justice Studies 3 *unit(s)*
- JS 132 - Race, Gender, Inequality and the Law 3 *unit(s)* (S)
- JS 151 - Criminological Theory 3 *unit(s)*
- JS 171 - Human Rights and Justice 3 *unit(s)* (V)

Complete One Course From:

- FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues 3 *unit(s)*
- JS 189 - Senior Seminar: Contemporary Problems 3 *unit(s)*

Concentration Required Courses (12 units)

- JS 102 - Police and Society 3 *unit(s)*
- JS 104 - Penal Politics & Institutions 3 *unit(s)*
- JS 152 - Juvenile Delinquency & Justice 3 *unit(s)*
- JS 155 - Victimology 3 *unit(s)*

University Electives (28 units)

A minor is strongly recommended

Justice Studies, MS (33 units)

Core Courses (18 units)

- JS 201 - Justice and Social Theory 3 *unit(s)*
- JS 202 - Survey of Research Methods 3 *unit(s)*
- JS 203 - Seminar in Applied Statistics in Justice 3 *unit(s)*
- JS 207 - Seminar in Qualitative Research Methods 3 *unit(s)*
- JS 211 - Historical Issues in Justice Studies 3 *unit(s)*
- JS 220 - Seminar: Criminological Theory 3 *unit(s)*

Electives (9 units)

Complete 9 units from:

- JS 204 - Justice Organizations, Ethics & Change 3 *unit(s)*
- JS 205 - Seminar in Law and Courts 3 *unit(s)*
- JS 206 - Seminar in Juvenile Justice 3 *unit(s)*
- JS 208 - Seminar: Punishment & Society 3 *unit(s)*
- JS 209 - Seminar in Police and Social Control 3 *unit(s)*
- JS 212 - Local & Global Perspectives on Human Rights 3 *unit(s)*
- JS 214 - Seminar: Social Movement, Community Organizing, and Social Justice 3 *unit(s)*
- JS 218 - Seminar: Immigration, Law & Justice 3 *unit(s)*
- JS 221 - Seminar: Deviance & Social Control 3 *unit(s)*
- JS 223 - Seminar: Comparative Criminology & Criminal Justice 3 *unit(s)*
- JS 281 - Justice Practicum 1-3 *unit(s)*
- JS 298 - Special Study 1-3 *unit(s)*

Culminating Experience (6 units)

Complete Plan A (with Thesis) or Plan B (Project).

Plan A (with Thesis)

- JS 299 - Master's Thesis 3-6 *unit(s)* (6 *units required*)

Plan B (Project)

- JS 297 - Program Evaluation Project 3 *unit(s)*
- Additional 3 units electives 3 *unit(s)*

Total Units Required (141 units)

The standalone Justice Studies, Criminology Concentration, BS program requires completion of JS 141, JS 142, or JS 181. Students satisfy this requirement in this SAGE Scholars Program by completing JS 220. Additionally, students will satisfy 9 units of Area major electives in this SAGE Scholars Program by completing JS 201, JS 202, and JS 211 in the Justice Studies, MS program. These 12 credits are considered to count toward both the graduate and undergraduate degrees, thus allowing SAGE students to meet the minimum unit requirements for both degrees

SJSU Online

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. These upper division degree completion programs are offered through a special session that

requires a separate application process. If interested, please contact one of our Enrollment Counselors for more information.

Economics, BA (SJSU Online)

Fully Online Degree Completion Program

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. This upper division degree completion program is offered through a special session that requires a separate application process.

The Department of Economics has one core mission: to train both graduate and undergraduate students in the economic way of thinking and market process. Our internationally recognized faculty will guide your exploration of economic theory, equipping you with the analytical decision-making skills to prepare you to succeed in careers in business, public policy, government service, data management, as well as providing a solid foundation for future doctoral studies in economics.

Economics is a general program, flexible enough to allow for a variety of student objectives. The Economics BA has 7 units of open electives. These elective units give students the flexibility to supplement the thinking skills developed in economics with technical skills developed in such fields as finance, marketing, and public relations. A bachelor degree in economics serves as an excellent springboard to an MBA or law degree.

- Program Learning Outcomes

Program Delivery

The program is delivered completely online. Classes will be delivered fully online both asynchronously (no designated days/times) and synchronously (designated days/times).

Summary of Degree Units

Transfer Units	60
University Graduation Requirements	9
Major Requirements	44
University Electives	7
Total	120

Program Roadmaps

The 2-Year Roadmaps are available online. Roadmaps should be used in consultation with the catalog and your advisor to identify additional requirements for completing the major (for example, course grade minimums).

Transfer Units (60 units)

- All applicants are required to have completed at least 60 transferable semester or 90 quarter units with an overall grade point average of 2.0 or better.
- Applicants must also have completed the Core Lower Division General Education Requirements (39 units).

- All four CSU-approved Basics Skills courses must be completed with a C- or better:
 - (A1) Oral Communication/Speech
 - (A2) Written English Composition
 - (A3) Critical Thinking/Logic
 - (B4) Math/Quantitative Reasoning (above the level of intermediate algebra)
- GE Area F - Ethnic Studies must be completed with a C- or better to meet the requirement at San Jose State University.
- Completion of at least 12 units of the following courses (or equivalents):
 - ECON 1A - Principles of Economics: Macroeconomics 3 unit(s) (with a grade of "C-" or better)
 - ECON 1B - Principles of Economics: Microeconomics 3 unit(s) (D) (with a grade of "C-" or better)
 - Any Statistics course 3 unit(s) (B4) (with a grade of "C-" or better)
 - MATH 71 - Calculus for Business and Aviation 3 unit(s) (B4)
 - MATH 71X - Calculus for Business and Aviation may be used instead of MATH 71. MATH 30 or 30X also accepted.*

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education

The Core Lower Division General Education Requirements (39 units) must be completed before transferring from a community college or any university.

Upper Division General Education (9 units)

Of the 9 units required by the university, 0 units may be satisfied by coursework outlined below. Consult your major advisor before selecting courses to satisfy the Upper Division General Education Requirements.

American Institutions

Recommend completion before transferring from a community college or any university. The American Institutions (AI) Requirement (US123) is normally satisfied with the completion of General Education Area D. Consult your major advisor to confirm you have satisfied the requirement.

Physical Education

The Physical Education Requirement (2 units) is recommended to be completed before transferring from a community college or any university. All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) to meet graduation requirements. For this major, the Graduation Writing Assessment Requirement (GWAR) is satisfied by a course in the major.

Major Requirements (44 units)

All courses required in the major (Core, Capstone, and major electives) must be completed with a minimum grade of "C-".

Core Courses (16 units)

- ECON 100W - Writing Workshop: Economic Reports 4 unit(s) (WID+R)
- ECON 101 - Microeconomic Analysis 4 unit(s)
- ECON 102 - Macroeconomic Analysis 4 unit(s)
- ECON 103A - Introduction to Econometrics and Research Methods 4 unit(s)

Capstone Experience (4 Units)

Complete one course:

- ECON 190 - History of Economic Thought 4 unit(s)
- ECON 191 - Economic Thought of Nobel Prize Winners 4 unit(s)

Upper Division Economics Electives (24 units)

Select six 100-level courses with the Department of Economics with the exception of ECON 109, which is not intended for majors.

University Electives (7 units)

Total Units Required (120 units)

Professional & Global Engagement

Professional & Global Engagement (PGE) offers professional education programs tailored to meet the diverse needs of current and prospective students, as well as professionals aiming to enhance their careers. Our innovative programs are designed to provide real-world knowledge and are delivered through flexible modes such as online learning, asynchronous study, and convenient off-site locations. In addition to our professional programming, we offer programs and comprehensive support tailored to the unique needs of our international student community. Through our Global Engagement programming and services, we strive to create a welcoming and inclusive environment, offering a range of services designed to enhance academic success, cultural integration, and overall student experience. From technical skill development to cultural immersion opportunities, we are committed to empowering students for success in a diverse and interconnected world.

SJSU Online

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. The special session degree completion programs offered through SJSU Online meet these potential graduates where they are, offering flexible 100% online pathways for degree attainment focused on the needs of the working learner, including multiple admission cycles, 8-week academic terms, and a per-unit tuition structure that is cost-effective for the part-time learner. These programs are offered through a special session that requires a separate application process. If interested, please contact one of our Enrollment Counselors for more information.

Professional Education

Professional & Global Engagement (PGE) offers professional education programs to current and prospective students and professionals seeking to expand their learning and advance in their careers by applying real-world knowledge. Our programs, offered in innovative modes (online, asynchronous, and accessible off-site locations) with accessible schedules (evenings, weekends, and summers) ensure that individuals from all walks of life (traditional students, re-entrants to the workforce, career changers, and working professionals) have access to our program offerings.

An academically and financially viable unit of San José State University, PGE is one of the most diverse (in types of programs offered), innovative, and successful units in the twenty-three campus California State University (CSU) system and has been serving the largest number of students over the past three years with the most extensive portfolio of graduate and undergraduate academic programs.

In partnership with the seven academic colleges, we offer a variety of professional degree programs at the Master's level, fully online undergraduate degree completion programs, advanced certificates, credential programs, and more.

In addition to our degree programs, we offer credit-earning courses to augment and complement regularly scheduled classes. Open University allows course access to non-matriculated students (including disqualified students) on a space-available basis to pursue their educational or personal enrichment goals and earn college credit.

Winter Intersession and Summer Intersession allow current SJSU students and the public an opportunity to take classes for college credit in winter and summer; we have a robust offering of courses, including General Education (GE) courses. These accelerated-format university courses are perfect for meeting prerequisites, completing GE or major course requirements, or enabling a faster pace toward graduation.

PGE also has non-credit continuing education courses to offer professionals (e.g., teachers, nurses, etc.) an opportunity to quantify their time in professional development and training activities by having the university maintain a record of their educational accomplishments for non-credit educational and career enhancement experiences.

Global Engagement

We are committed to internationalizing our campus to cultivate an environment of diversity and inclusion, and to graduate students who are prepared to live and lead in an increasingly globalized world.

SJSU serves more international students than any other master's granting university in the U.S. Our students have high success in obtaining internships and work opportunities in Silicon Valley via curriculum practical training during their studies, and once they graduate, they have opportunities to participate in OPT/STEM OPT.

Our International Student & Scholar Services office (ISSS) offers comprehensive immigration advising and co-curricular support programming for our international students and scholars. The goal of ISSS is to enhance the students' experience in the U.S. and integrate them into our community, while also contributing to their success during their tenure at SJSU and beyond.

In addition, our Study Abroad and Away office offers an extensive portfolio of off-campus globally-focused programs that strive to meet the personal, academic, and professional goals of our students. We aim to provide programs for all

SJSU students to learn and discover other cultures first-hand, including study abroad (international) and away (domestic), short-term (winter, spring, and summer breaks), and long-term (semester and year-long) options.

Our International Gateways unit provides comprehensive support services and instruction to help non-matriculated international students thrive at our University. Through International Conditional Admissions, we help students apply for Conditional Admission/Eligibility to SJSU undergraduate and graduate degree programs. International students interested in studying abroad in Silicon Valley can participate in our Semester at SJSU program. In addition to regularly scheduled programs, we partner with global universities and SJSU academic departments to develop and deliver customized non-credit programs for students and professionals.

Our International House (I-House) provides a welcoming intercultural living environment to U.S. and international students and scholars affiliated with San Jose State University. The residents of I-House live together under one roof as an extended family in their home away from home at 360 S. 11th Street, near SJSU's main campus. With a supportive, skillful, and dedicated staff, it offers opportunities to enhance academic success and participate in a myriad of socio-cultural activities while facilitating intercultural communication and competence.

For more information about our programs, please visit the websites linked below.

Professional Education

Student Union
408-924-2670
www.sjsu.edu/professional/
pace@sjsu.edu

Study Abroad and Away (SAA)

Student Union
408-924-5931
www.sjsu.edu/current/studyabroad/
spartansabroad@sjsu.edu

SJSU International House

Student Union
408-924-6570
www.sjsu.edu/ihouse
ihouse@sjsu.edu

International Student and Scholar Services (ISSS)

Services and programs for international students
Student Union
408-924-5920
www.sjsu.edu/iss
international-office@sjsu.edu

Athletics (Intercollegiate)

Office: Alan B. Simpkins Intercollegiate Athletics Administration Building

1393 South 7th Street, San Jose, CA 95112

Telephone: 408-924-1200 (Voice); 408-924-1291 (Fax)

Professors

Travis Boyce, NCAA Faculty Athletics Representative

Leadership

Jeffrey Konya, Director of Athletics

See the Athletics Staff Directory for a complete list of Athletics leadership.

Overview

Intercollegiate athletics offers a comprehensive spectrum of 22 sports (9 men's and 13 women's) which compete at the NCAA Division I level (the highest level of collegiate competition). San Jose State University is a member of the Mountain West Athletic Conference. Over the years, San Jose State athletics teams have won 10 NCAA team and 50 individual championships.

Course offerings are designed to satisfy the needs and interests of highly skilled student-athletes and provide them with the highest level of intercollegiate athletics experience. Note: Courses are open only to those SJSU students who are currently on one of the Spartan team rosters.

College of Graduate Studies

Office: Administration Building 174

Telephone: 408-924-2427

Email: graduate-studies@sjsu.edu

Website: www.sjsu.edu/cgs

Leadership:

Marc d'Alarcao, Dean

Jeffrey Honda, Associate Dean of Graduate Programs

Amy Leisenring, Associate Dean of Inclusive Student Success

The College of Graduate Studies assists graduate programs and their faculty and students to succeed. The College of Graduate Studies supports program development, advising faculty in transforming existing degree and certificate programs or building new ones at the post-baccalaureate, master's, or doctoral level. The College of Graduate Studies is also a resource for students seeking scholarships or who are facing special challenges such as probation or disqualification. The college helps maintain academic integrity through the fair and consistent administration of graduate policies, including those issued by the Chancellor and by the university's Academic Senate. Its Graduate Admissions and Program Evaluations (GAPE) division supports students as they enter and work their way through various degree requirements. The College of Graduate Studies interprets and administers the policies and procedures outlined in the sections that follow.

The Interdisciplinary Studies Major for either a Master of Arts or a Master of Science degree provides an alternative for individuals whose desired study plans do not fit the degree offerings of any single existing degree program on campus. In most cases, a thesis is required for this degree. Applicants or graduate students in other majors who wish to undertake the Interdisciplinary Studies major should consult the College of Graduate Studies Interdisciplinary Studies website to obtain the Information and Application for Interdisciplinary Studies Majors [pdf]. The guide contains the Proposal for Interdisciplinary Studies Major, which must be completed to obtain initial approval by the Associate Dean of Graduate Studies to be able to enter the program.

- Interdisciplinary Studies, MA
- Interdisciplinary Studies, MS

Degrees

Lucas College and Graduate School of Business

The Lucas Graduate School of Business in the Lucas College and Graduate School of Business offers the following degree programs:

- Accounting and Analytics, MS
- Business Administration, MBA
- Early Career
- For Professionals
- Finance, MS
- Taxation, MS
- Transportation Management, MS

Connie L. Lurie College of Education

The Connie L. Lurie College of Education offers the following degree programs:

- Child and Adolescent Development, MA
- Counseling and Guidance, MA
- Educational Leadership, Concentration in Emancipatory School Leadership, MA
- Educational Leadership, EdD (Fully Online)
- Educational Leadership, EdD (Hybrid)
- Higher Education Leadership, MA
- Multilingual and Multicultural Literacy Education, MA
- Special Education, MA
- Speech Language Pathology, MS
- Teaching, Critical Bilingual Education (Spanish) Concentration, MAT
- Teaching, MAT

Charles W. Davidson College of Engineering

The Charles W. Davidson College of Engineering offers the following degree programs:

- Aerospace Engineering, MS
- Artificial Intelligence, MS
- Biomedical Engineering, Biomedical Devices Concentration, MS
- Biomedical Engineering, MS (General)
- Chemical Engineering, MS
- Civil Engineering, MS
- Computer Engineering, MS
- Electrical Engineering, MS
- Engineering Management, MS
- Engineering Technology, MS
- Engineering, MS
- Human Factors/Ergonomics, MS
- Human Factors/Ergonomics, User Experience Concentration, MS
- Industrial and Systems Engineering, MS
- Materials Engineering, MS
- Mechanical Engineering, MS
- Quantum Technology, MS

- Software Engineering, MS

College of Health and Human Sciences

The College of Health and Human Sciences offers the following degree programs:

- Audiology, AUD
- Kinesiology, MS
- Nursing, Family Nurse Practitioner Concentration, MS
- Nursing, MS
- Nursing Practice, DNP
- Nutritional Science, MS
- Occupational Therapy, MS
- Occupational Therapy Doctorate, OTD
- Public Health, MPH
- Social Work, MSW

College of Humanities and the Arts

The College of Humanities and the Arts offers the following degree programs:

- Art, Art History and Visual Culture Concentration, MA
- Art, Digital Media Art Concentration, MFA
- Art, Photography Concentration, MFA
- Art, Pictorial Art Concentration, MFA
- Art, Spatial Art Concentration, MFA
- Computational Linguistics, MS
- Creative Writing, MFA
- Design, MDes
- English, MA
- Linguistics, MA (Not Accepting Students)
- Mass Communications, MS
- Music Education, MA
- Music, MM
- Philosophy, MA
- Spanish, MA
- Teaching English to Speakers of Other Languages (TESOL), MA (Not Accepting Students)

College of Information, Data & Society

The College of Information, Data & Society offers the following degree programs:

- Archives and Records Administration, MARA
- Data Analytics, MS
- Informatics, MS
- Library and Information Science, MLIS

College of Science

The College of Science offers the following degree programs:

- Applied Mathematics, MS
- Bioinformatics, MS
- Biological Sciences, MA
- Biological Sciences, Ecology and Evolution Concentration, MS
- Biological Sciences, Molecular Biology and Microbiology Concentration, MS
- Biological Sciences, Physiology Concentration, MS
- Biotechnology, MBT
- Chemistry, MA
- Chemistry, MS
- Computer Science, MS
- Data Science, MS
- Geology, MS
- Marine Science, MS
- Mathematics, MA (General)
- Medical Product Development Management, MS
- Meteorology, MS
- Physics, MS
- Quantum Technology, MS
- Science Education, MS
- Statistics, MS

College of Social Sciences

The College of Social Sciences offers the following degree programs:

- Applied Anthropology, MA
- Chicana and Chicano Studies, MA
- Clinical Psychology, MS
- Communication Studies, MA
- Criminology, Global Criminology Concentration, MS
- Economics, MA
- Economics, Applied Economics Concentration, MA
- Environmental Studies, MS
- Geography, MA
- History, MA
- Justice Studies, MS
- Psychology, Industrial/Organizational Psychology Concentration, MS
- Psychology, Research and Experimental Psychology Concentration, MA
- Public Administration, MPA
- Urban Planning, MUP

Certificates

- Accounting Fundamentals Certificate
- Advanced Accounting Topics Certificate
- Advanced Certificate in Geographic Information Systems (GIS) Certificate
- Advanced Communication(s) and Research Methods Certificate
- Advanced Global Leadership Certificate

- Advanced Social Work Practice in Gerontology Certificate
- Advanced Social Work Practice in Mental Health Certificate
- Advanced Taxation Certificate
- Affordable Housing and Community Development Finance Certificate
- Applications of Technology in Planning Certificate
- Business Analytics Certificate
- Clinical Genetic Molecular Biologist Scientist Training Program Certificate
- Clinical Laboratory Scientist (CLS) Training Program Certificate
- Community Design and Development Certificate
- Computational Linguistics Certificate
- Cybersecurity Engineering Certificate
- Cybersecurity Foundations Certificate
- Cybersecurity: Core Technologies Certificate
- Environmental Planning Certificate
- Ethics of Science and Emerging Technologies, Advanced Certificate
- Fundamentals of Cybersecurity Certificate
- Global Citizenship Certificate
- Global Philosophical Traditions Certificate
- Graduate TESOL Certificate (Not accepting students)
- High Technology Taxation Certificate
- High-Speed and Intercity Rail Management Certificate
- Higher Education Teaching Certificate
- International Taxation Certificate
- Library and Information Science Post-Master's Certificate
- Mindfulness-Based Health and Human Services Certificate
- Nursing Specialty Advanced Certificate
- Philosophy Post-baccalaureate Certificate
- Professional and Technical Writing Certificate
- Real Estate Development Certificate
- Secure Software Engineering Certificate
- Secure Test Engineering Certificate
- Six Sigma Black Belt Certificate
- Strategic Management of Digital Assets and Services Certificate
- Tax Practice Certificate
- Theory, Knowledge and Practice about Autism Spectrum Disorders Certificate (Not Accepting Students)
- Translation and Interpretation Certificate
- Transportation and Land Use Planning Certificate
- Transportation Management Certificate
- Transportation Safety, Security, and Emergency Management (TSSEM) Certificate
- Undergraduate TESOL Certificate

Credentials

- California Library Media Teacher Services Credential - now Teacher Librarian Credential
- Education Specialist Preliminary Teaching Credential: Early Childhood Special Education
- Education Specialist Preliminary Teaching Credential: Extensive Support Needs
- Multiple Subject Credential
- PK-3 Early Childhood Education (PK-3 ECE) Specialist Instruction Credential
- Pupil Personnel Services (PM-PPSC) Post-Master's Credential
- Education Specialist Preliminary Teaching Credential: Mild/Moderate Support Needs

- Pupil Personnel Services (PPS) School Counseling Credential
- Pupil Personnel Services (PPSC) Credential (Social Work)
- Single Subject Credential - Art
- Single Subject Credential - English
- Single Subject Credential - Mathematics
- Single Subject Credential - Music
- Single Subject Credential - Physical Education
- Single Subject Credential - Science
- Single Subject Credential - Social Science
- Single Subject Credential - World Languages
- Teacher Librarian Credential

Added Authorizations

- Adapted Physical Education Added Authorization
- Bilingual Authorization in Spanish
- Child Welfare and Attendance (CWA) Authorization
- Introductory Computer Science Supplementary Authorization
- Early Childhood Special Education Added Authorization (Not Accepting Students)

Master(s)

Interdisciplinary Studies, MA

- Overview
- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation

Overview

The Interdisciplinary Studies master's program for either an MA or MS provides an alternative for individuals whose desired plan of study does not fit into the degree offerings of any single existing graduate degree program on campus.

More information about the program can be found on the College of Graduate Studies website at www.sjsu.edu/cgs.

Admissions Requirements

Candidates apply separately to the university to obtain approval for university-level admission and to the College of Graduate Studies for admission to the Interdisciplinary Studies program. Candidates must meet all university admission requirements. They must also satisfy programmatic requirements, including a minimum 3.25 GPA in the last 60 semester units of post-secondary academic work.

The student must then complete, sign, and route the DocuSign PowerForm: Information and Application for Interdisciplinary Studies Majors. In brief, the application includes the signature of a tenured or tenure-track faculty member from San Jose State who agrees to chair the master's committee of the student. Approval of the proposed curriculum, periodic advice, and supervision of the student's research and culminating experience are required of the

faculty mentor. A summary of the proposed research and reasons for the appropriateness of the Interdisciplinary Studies program are also needed in advance of a positive admissions decision.

Finally, all coursework listed in the program of study must receive documented permission from the department(s) offering the courses to enroll. Once the application is completed, the application is routed to the applicant's advisor and the College of Graduate Studies Graduate Program Coordinator (Dr. Ted Butryn) who will make the final admissions decision. A copy will be sent to the Associate Dean (AD) of Graduate Studies. Please be sure to use proper email addresses for both your proposed program advisor and Dr. Butryn so that the form is reviewed and approved.

Applicants from countries in which the official language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE.

Requirements for Advancement to Graduate Candidacy

General university requirements for advancement to candidacy for the Interdisciplinary Studies master's degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MA or MS - Interdisciplinary Studies Graduation Requirements

The program consists of an individualized program of 30 units in classes taken from at least two different departments; a minimum of half of the units must be in graduate-level classes. Prerequisite classes must be taken in excess of the 30 unit total. The program may be Plan A (thesis), Plan B (project, but under highly restricted circumstances), or Plan C (creative project). All courses must be approved by the AD of Graduate Studies. The culminating experience must be approved by the student's master's program advisor.

Interdisciplinary Studies, MS

- Overview
- Admissions Requirements
- Requirements for Advancement to Graduate Candidacy
- Requirements for Graduation

Overview

The Interdisciplinary Studies master's program for either an MA or MS provides an alternative for individuals whose desired plan of study does not fit into the degree offerings of any single existing graduate degree program on campus.

More information about the program can be found on the College of Graduate Studies website at www.sjsu.edu/cgs.

Admissions Requirements

Candidates apply separately to the university to obtain approval for university-level admission and to the College of Graduate Studies for admission to the Interdisciplinary Studies program. Candidates must meet all university admission requirements. They must also satisfy programmatic requirements, including a minimum 3.25 GPA in the last 60 semester units of post-secondary academic work.

The student must then complete, sign, and route the DocuSign PowerForm: Information and Application for Interdisciplinary Studies Majors. In brief, the application includes the signature of a tenured or tenure-track faculty member from San Jose State who agrees to chair the master's committee of the student. Approval of the proposed curriculum, periodic advice, and supervision of the student's research and culminating experience are required of the faculty mentor. A summary of the proposed research and reasons for the appropriateness of the Interdisciplinary Studies program are also needed in advance of a positive admissions decision.

Finally, all coursework listed in the program of study must receive documented permission from the department(s) offering the courses to enroll. Once the application is completed, the application is routed to the applicant's advisor and the College of Graduate Studies Graduate Program Coordinator (Dr. Ted Butryn) who will make the final admissions decision. A copy will be sent to the Associate Dean (AD) of Graduate Studies. Please be sure to use proper email addresses for both your proposed program advisor and Dr. Butryn so that the form is reviewed and approved.

Applicants from countries in which the official language is not English must achieve a minimum English-language proficiency test score as indicated on the Graduate Program Test Requirements webpage at GAPE.

Requirements for Advancement to Graduate Candidacy

General university requirements for advancement to candidacy for the Interdisciplinary Studies master's degree are detailed in the Graduate Policies and Procedures section. Candidacy includes the successful completion of the Graduation Writing Assessment Requirement (GWAR).

Requirements for Graduation

University Graduation Requirements

Students must complete all residency, curriculum, unit, GPA, and culminating experience requirements as outlined in the Graduation Requirements section of the Graduate Policies and Procedures.

MA or MS - Interdisciplinary Studies Graduation Requirements

The program consists of an individualized program of 30 units in classes taken from at least two different departments; a minimum of half of the units must be in graduate-level classes. Prerequisite classes must be taken in excess of the 30 unit total. The program may be Plan A (thesis), Plan B (project, but under highly restricted circumstances), or Plan C (creative project). All courses must be approved by the AD of Graduate Studies. The culminating experience must be approved by the student's master's program advisor.

Advanced Certificate(s)

Advanced Communication(s) and Research Methods Certificate

The Advanced Communication(s) and Research Methods certificate program will allow postgraduate students to pursue interests in interdisciplinary study and earn an advanced certificate by enrolling in graduate or upper-division courses in writing, oral communication and data analysis across a wide array of academic discipline choices. Development of these skills are important in strengthening personal and professional relationships, enhance teamwork, and assist in job performance and advancement. Additionally, this program will allow the student to carefully consider pursuing a MA/MS Interdisciplinary Studies degree by allowing time to meet with potential advisors and develop a research project or thesis during their first academic semester and explore various academic avenues through a customized course of study.

This certificate should be completed through the course of a single semester. Students who wish to continue towards completion of either the Interdisciplinary Studies master's degree or other graduate degree should transfer into the program before their second semester. Students who require a second semester to complete the certificate should contact the Associate Dean of Graduate Studies for more information.

The College of Graduate Studies Associate Dean (CGS AD) serves as advisor for the certificate program and will review all student programs of study to ensure the following:

1. That students take at least one 3-unit course to fulfill each program requirement (i.e. writing, oral communication, and a methodology course).
2. Approved courses for enrollment are chosen based on student interest, potential double-counting into a graduate program, fulfillment of course prerequisites (if listed below), and evaluating a student's potential success in a proposed course (based on undergraduate record and previous course history).
3. As graduate-level courses are lower capped and may be restricted to students in a specific program, enrollment in a graduate course is permitted only after approval from either the course instructor or graduate coordinator.

Student Admissions

Students who wish to apply for this program do so through Cal State Apply for this regular session, advanced certificate program. Additionally:

1. Students will be admitted under the current Interdisciplinary Studies Master's admission standards for fall and spring semester.
2. Students will only be admitted to the program if they have met with the faculty program coordinator and drafted an approved course of study through the College of Graduate Studies application process currently used for the master's program. The approved courses will require either that the student has successfully completed prerequisites or have been given instructor approval.
3. Students will earn a certificate once the minimum 9 units have been completed. If a student wishes to move to the master's program, the student will do a Program Transfer via Office of Graduate Admissions and Program Evaluations and move into the master's if they are currently matriculated. If a student falls out of status, then they would have to reapply into the program.

University Advanced Certificate Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate

may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Certificate Requirements (9-12 units)

Graduate Writing (3-4 units)

In consultation with the CGS AD, choose one of the following courses graduate writing courses (GWAR certified/graduate level):

- ECON 203A - Economic Research Methods 3 *unit(s)* (GWAR)
- EDLD 212 - Diversity, Equity, and Social Justice in Higher Education 3 *unit(s)* (GWAR)
- EDTE 208 - Educational Sociology 3 *unit(s)* (GWAR)
- HIST 221 - Seminar in World History 4 *unit(s)* (GWAR)
- HIST 230 - Seminar in Ancient and Medieval Europe 4 *unit(s)* (GWAR)
- HIST 240 - Seminar in Pre-Twentieth Century Europe 4 *unit(s)* (GWAR)
- HIST 241 - Seminar in Twentieth Century Europe 4 *unit(s)* (GWAR)
- HIST 272 - Seminar in American Diplomatic History 4 *unit(s)* (GWAR)
- HIST 274 - Seminar in US Social & Cultural History 4 *unit(s)* (GWAR)
- HIST 276 - Seminar in Early American History 4 *unit(s)* (GWAR)
- HIST 280 - Seminar in Recent American History 4 *unit(s)* (GWAR)
- HIST 283 - Seminar in California and Western History 4 *unit(s)* (GWAR)
- HIST 288 - Seminar in the History of Women in the United States 4 *unit(s)* (GWAR)
- JS 201 - Justice and Social Theory 3 *unit(s)* (GWAR)
- KIN 250 - Fundamentals of Quantitative Research 3 *unit(s)* (GWAR)
- LLD 250W - Becoming a Professional in Linguistics/TESOL 3 *unit(s)* (GWAR)
- MCOM 210 - Media and Social Issues 3 *unit(s)* (GWAR)
- NUFS 217 - Issues in Nutrition, Food and Packaging 3 *unit(s)* (GWAR)
- PADM 210 - Introduction to Public Administration 3 *unit(s)* (GWAR)
- PHIL 290 - Advanced Seminar in a Selected Philosopher or Tradition 3 *unit(s)* (GWAR)
- *COMM 200-level courses to be permitted on a semester-by-semester basis with the consent of the Graduate Coordinator and individual instructors.*
- *Other Graduate GWAR course with advisor approval*

Research Methods (3-4 units)

In consultation with the CGS AD, choose one of the following (Quantitative or Qualitative) upper division or graduate level methods courses:

- ANTH 149 - Ethnographic Methods 3 *unit(s)*
- BUS2 138 - Marketing Research 3 *unit(s)*
- BUS2 190 - Fundamentals of Business Analytics 3 *unit(s)*
- BUS 235B - Business Research 3 *unit(s)*
- BUS 260 - Managerial Decision Analysis 3 *unit(s)*
- CCS 150 - Research Methods 3 *unit(s)*
- CCS 275 - Research Methods 3 *unit(s)*
- ECON 103 - Intro to Econometrics 4 *unit(s)*
- GEOG 135 - Research Methods in Geography 3 *unit(s)*
- JS 114 - Research Methods in Justice Studies 3 *unit(s)*
- JS 117 - Qualitative Research Methods 3 *unit(s)*
- KIN 175 - Measurement and Evaluation in Kinesiology 3 *unit(s)*
- KIN 251 - Fundamentals of Qualitative Research 3 *unit(s)*
- MCOM 104 - Introduction to Mass Communications Research 3 *unit(s)*
- MCOM 215 - New Media Visionaries 3 *unit(s)*
- MCOM 284 - Advanced User Experience 3 *unit(s)*
- MCOM 285 - Web Design and Development 3 *unit(s)*
- MCOM 295 - Mass Communications Research 3 *unit(s)*
- PHIL 289 - Graduate Proseminar 3 *unit(s)*
- POLS 100M - Political Inquiry 4 *unit(s)*
- PSYC 117 - Psychological Tests and Measures 3 *unit(s)*
- PSYC 118 - Advanced Research Methods in Psychology 3 *unit(s)*
- SOCI 104 - Quantitative Research Methods 3 *unit(s)*
- SOCI 105 - Qualitative Research Methods 3 *unit(s)*
- STAT 115 - Intermediate Statistics 3 *unit(s)*
- *COMM 200-level courses to be permitted on a semester-by-semester basis with the consent of the Graduate Coordinator and individual instructors.*
- *Other upper division or graduate-level course with advisor approval*

Oral Communications (3-4 units)

Choose a minimum of 3 units of the following upper division or graduate level presentation/seminar courses:

- BUS 200L - Leadership Communication 2 *unit(s)*
- BUS 201 - Business Communications 1 *unit(s)*
- UNVS 101 - Leadership and Career Accelerator 3 *unit(s)*
- *COMM 200-level courses to be permitted on a semester-by-semester basis with the consent of the Graduate Coordinator and individual instructors.*

Total Units Required (9-12 units)

Undergraduate Education

Office: Administration Building, 159

Telephone: 408-924-2447

Website: Undergraduate Education

Email: undergraduate-education@sjsu.edu

Leadership:

Heather Lattimer, Interim Vice Provost for Undergraduate Education (Education)
Melinda Jackson, Associate Dean of Undergraduate Education (Political Science)

Overview

Undergraduate Education (UE) is involved with all aspects of undergraduate academic matters that support retention and graduation of students. It includes the following areas and programs: Academic Preparation Programs, Campus Reading Program, Center for Community Learning and Leadership, CommUniverCity, General Education, Catalog, and Curriculum.

The courses offered by UE under the subject **University Studies (UNVS)** promote leadership, integrated and applied interdisciplinary academic experiences for students. UE also sponsors the Interdisciplinary Studies undergraduate degree, which is an individually designed course of study leading to a BA or BS degree. The Interdisciplinary Studies degree is designed for situations in which no existing university-level SJSU undergraduate degree major adequately accommodates academic professional aims. Students who complete an Interdisciplinary Studies degree shall be able to demonstrate the characteristics of "intentional learners" who can adapt to new environments, integrate knowledge from different sources, and continue learning throughout their life.

Undergraduate Major(s)

Interdisciplinary Studies, BA

The Office of Undergraduate Education sponsors the Interdisciplinary Studies, BA. The Interdisciplinary Studies major is designed for situations in which no existing SJSU undergraduate degree adequately accommodates academic professional aims. Students who complete the major shall be able to demonstrate the characteristics of "intentional learners" who can adapt to new environments, integrate knowledge from different sources, and continue learning throughout their life.

The Interdisciplinary Studies major is an individually designed, interdisciplinary course of study leading to a BA that gives a student who has a specific educational objective the opportunity to accomplish that goal. It is not to be used to bypass normal graduation requirements or projected programs of the University, nor to substitute for a major in which a student is having academic difficulty.

- Major Requirements (40 units)
- Procedures to Apply for the Interdisciplinary Studies BA

Program Learning Outcomes

The proposed course of study must be a coherent program organized around an academic theme. Students who complete the major shall be able to demonstrate: "the ability to analyze an issue or problem, integrating at least two disciplinary perspectives." In addition, students identify two or more student learning outcomes related to their specific areas of study in consultation with a major faculty advisor. They demonstrate their attainment of the learning outcomes through a portfolio or senior project completed in a capstone course.

Eligibility Requirements

Applicants must have both a cumulative and SJSU GPA of at least 2.75, at least sixty units earned (upper division standing), and at least one year of academic work still to be completed to meet minimum degree requirements. Interdisciplinary Studies majors are considered on a case-by-case basis. Approval is based on the academic merit of the proposed course of study, the applicant's proposed rationale and potential for successful completion of the program, and the ability of the university to support the proposed program. Students apply for consideration for the major through the Office of Undergraduate Education.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

Core Lower Division General Education (39 units)

Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

American Institutions (6 units)

Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)
- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Major Requirements (40 units minimum)

- Students must formally request admission to the Interdisciplinary Studies major program through the Office of Undergraduate Education.
- The student must cite academic and professional objectives and describe the nature of the proposed major. The student must have at least one year of academic work still to be completed to meet the minimum degree requirements.
- The student must have both cumulative and an SJSU GPA of at least 2.75.

Procedures

Before, during, and after the initial consultation with the Associate Dean for Undergraduate Education, student must complete the following:

- A written reflective statement that includes:
 - description of the proposed major;
 - discussion of why existing majors are not suitable;
 - a reflection on what it means to the student to be an "educated person" and how this major will help the student to become one;
 - academic, professional, and personal objectives; and,
 - how does your Interdisciplinary Studies major help you to meet your academic, professional, and personal objectives?
- Note: Students requesting academic accommodations due to disability-related limitations are encouraged to register with the Accessible Education Center as soon as possible. Register online at [How to Register With AEC](#).
- A major course of study plan that includes:
 - 40-45 total units in the major;
 - 24 units in residence at SJSU; and,
 - 30-40 units in upper division.

- Student must meet with department advisor(s) and have a suggested major advisor (Undergraduate Education does not assign advisors, students pick major advisor).
- Completion of the major course of study plan in consultation with the suggested major advisor and other departments involved in the program;
- Preparation of the Interdisciplinary Studies Major worksheet and evaluation of General Education and graduation requirements in consultation with the Associate Dean for Undergraduate Education. Approval of Interdisciplinary Studies Major Worksheet; and,
- Approval of modifications in Course of Study by Associate Dean for Undergraduate Education.
- If Interdisciplinary Studies Major is approved, students must complete the following:
 - A Change of Major Form;
 - Major Form (will be completed between the student, department advisor(s), and Associate Dean for Undergraduate Education);
 - Application for Graduation; and,
 - Forms must be completed and submitted at least 1 year prior to graduation.

Diploma and transcript will contain the title (Interdisciplinary Studies) followed by the exact title of the major listed in the Major Form.

University Electives (27 units)

Total Units Required (120 units)

Interdisciplinary Studies, BS

The Office of Undergraduate Education sponsors undergraduate degrees as an Interdisciplinary Studies, BS. The major is designed for situations in which no existing SJSU undergraduate degree major adequately accommodates academic professional aims. Students who complete a Interdisciplinary Studies major shall be able to demonstrate the characteristics of "intentional learners" who can adapt to new environments, integrate knowledge from different sources, and continue learning throughout their life.

The Interdisciplinary Studies major is an individually designed, interdisciplinary course of study leading to a BS that gives a student who has a specific educational objective the opportunity to accomplish that goal. It is not to be used to bypass normal graduation requirements or projected programs of the University, nor to substitute for a major in which a student is having academic difficulty.

- Major Requirements (40 units)
- Procedures to Apply for the Interdisciplinary Studies BS

Program Learning Outcomes

The proposed course of study must be a coherent program organized around an academic theme. Students who complete the Interdisciplinary Studies major shall be able to demonstrate: "the ability to analyze an issue or problem, integrating at least two disciplinary perspectives." In addition, students identify two or more student learning outcomes related to their specific areas of study in consultation with a major faculty advisor. They demonstrate their attainment of the learning outcomes through a portfolio or senior project completed in a capstone course.

Eligibility Requirements

Applicants must have both a cumulative and SJSU GPA of at least 2.75, sixty units earned (upper division standing), and at least one year of academic work still to be completed to meet minimum degree requirements. Interdisciplinary Studies majors are considered on a case-by-case basis. Approval is based on the academic merit of the proposed course of study, the applicant's proposed rationale and potential for successful completion of the program, and the

ability of the university to support the proposed program. Students apply for consideration for the Interdisciplinary Studies major through the Office of Undergraduate Education.

University Requirements

Students must satisfy all of the major and Undergraduate University Graduation Requirements, which includes unit, GPA, and residency requirements as well as the below identified General Education, American Institutions, Graduation Writing Assessment, and Physical Education requirements. Courses that meet Undergraduate University Graduation Requirements are noted with an area designation (see Course Note Abbreviations).

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Courses that meet GE Areas A1, A2, A3, B4, or F must be passed with a "C-" or better to meet the requirement. Consult with a major advisor for details.

Upper Division General Education (9 units)

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Complete one 6-unit sequence of American Institutions (US123) courses, which also satisfies GE Area D. Students may also satisfy the American Institutions Requirement with other courses, but these may not satisfy other GE areas.

The American Studies sequence (AMS 10/AMS 11; 6 units) satisfies the American Institutions Requirement and additional GE Areas (see course descriptions for details).

Consult with a major advisor to select the appropriate sequence.

African American Studies (6 units)

- AFAM 2A - African Americans and the Development of America's History and Government 3 *unit(s)* (D)
- AFAM 2B - African Americans and the Development of America's History and Government 3 *unit(s)* (D+US123)

Asian American Studies (6 units)

- AAS 33A - Asian Americans in U.S. History I 3 *unit(s)* (D)
- AAS 33B - Asian Americans in U.S. History II 3 *unit(s)* (D+US123)

Chicana and Chicano Studies (6 units)

- CCS 10A - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D)
- CCS 10B - Mexican Americans and the Development of U.S. History and Government 3 *unit(s)* (D+US123)

U.S. History and Government (6 units)

Complete One US1: US History Course

- AMS 10 - Stories that Make America 3 *unit(s)* (C2+US1)

- HIST 15 - Essentials of U.S. History 3 *unit(s)* (D+US1)
- HIST 170S - Topics in American History: American Identities and Institutions 3 *unit(s)* (S+US1)

Complete One US23: US Constitution and California Government Course

- AMS 11 - Visions of Democracy 3 *unit(s)* (D+US23)
- POLS 15 - Essentials of U.S. & California Government 3 *unit(s)* (D+US23)
- POLS 16 - Power and Ideas in American Politics 3 *unit(s)* (C2+US23)
- POLS 170V - American Politics in Global Perspective 3 *unit(s)* (V+US23)

Physical Education (2 units)

All SJSU undergraduate students, regardless of major, have an opportunity to expand their knowledge and skills in physical activities. To accommodate students' needs and interests, the university offers a diverse selection of activity courses.

Graduation Writing Assessment Requirement (3 units)

At SJSU, students must pass a Writing in the Disciplines (100W) course with a grade of C or better (C- not accepted) is required to meet graduation requirements. Exceptions to the GVAR may be found in the Graduation Writing Assessment Requirement (GVAR) section.

Major Requirements (40 units minimum)

- Students must formally request admission to a Interdisciplinary Studies major program through the Office of Undergraduate Education.
- The student must cite academic and professional objectives and describe the nature of the proposed major. The student must have at least one year of academic work still to be completed to meet the minimum degree requirements.
- The student must have both cumulative and an SJSU GPA of at least 2.75.

Procedures

Before, during, and after the initial consultation with the Associate Dean for Undergraduate Education, student must complete the following:

- A written reflective statement that includes:
 - description of the proposed major;
 - discussion of why existing majors are not suitable;
 - a reflection on what it means to the student to be an "educated person" and how this major will help the student to become one;
 - academic, professional, and personal objectives; and,
 - how does your Interdisciplinary Studies major help you to meet your academic, professional, and personal objectives?
- Note: Students requesting academic accommodations due to disability-related limitations are encouraged to register with the Accessible Education Center as soon as possible. Register online at [How to Register With AEC](#).
- A major course of study plan that includes:
 - 40-45 total units in the major;

- 24 units in residence at SJSU; and,
- 30-40 units in upper division.
- Student must meet with department advisor(s) and have a suggested major advisor (Undergraduate Education does not assign advisors, students pick major advisor).
- Completion of the major course of study plan in consultation with the suggested major advisor and other departments involved in the program;
- Preparation of the Interdisciplinary Studies major worksheet and evaluation of General Education and graduation requirements in consultation with the Associate Dean for Undergraduate Education. Approval of Interdisciplinary Studies Major Worksheet; and,
- Approval of modifications in Course of Study by Associate Dean for Undergraduate Education.
- If Interdisciplinary Studies major is approved, students must complete the following:
- A Change of Major Form;
- Major Form (will be completed between the student, department advisor(s), and Associate Dean for Undergraduate Education);
- Application for Graduation;
- Forms must be completed and submitted at least 1 year prior to graduation.

Diploma and transcript will contain the title (Interdisciplinary Studies) followed by the exact title of the major listed in the Major Form.

University Electives (27 units)

Total Units Required (120 units)

Undergraduate Minor(s)

Interdisciplinary Studies Minor

The Interdisciplinary Studies Minor provides a curricular mechanism to motivate students to take interdisciplinary courses in service of solving pervasive social and societal problems. Students in any major will benefit from a minor that teaches them how to approach pressing problems from multiple perspectives and to arrive at solutions and recommendations that align with their interests and that draw on their academic training. Students work in supervised teams to ask historical, ethical, and technical questions; do research; propose and prototype solutions.

Students with at least a 3.5 GPA in the minor will receive an Honors designation on the transcript.

Minor Prerequisites

Students must have completed 60 units when they start the minor, be in good academic standing, and submit an application. For more information, email honorsx@sjsu.edu.

Minor Requirements (9 units)

- UNVS 120 - Conceptualizing Complex Problems 3 *unit(s)*
- UNVS 121 - Social Problems Topics 3 *unit(s)*
- UNVS 122 - Steps in Real-World Problem Solving 3 *unit(s)*

Additional Required Courses (6 units)

Complete any combination of courses from the following:

- UNVS 101 - Leadership and Career Accelerator
- UNVS 123 - HonorsX Explorations
- UNVS 124 - HonorsX Research or Practicum Experience
- One or more General Education (GE) courses relating to HonorsX topic 3 *unit(s)*

Note: Any upper-division GE course(s) related to the HonorsX topic can double-count for the Minor.

- One or more upper-division electives relating to HonorsX topic 3 *unit(s)*

Note: Any upper-division elective(s) related to the HonorsX topic can double-count for the Minor.

- One upper-division course from your major relating to HonorsX topic 3 *unit(s)*

Note: One course for your major requirements relating to the HonorsX topic can double-count for the Minor.

Total Units Required (15 units)

Basic Certificates University Requirements

Basic certificate programs provide opportunities for students to pursue specialized, often pre-professional, focused educational objectives that may be separate from a degree program. At least 6 units must be completed at SJSU. Students must have a minimum GPA of 2.0 in basic certificate coursework in order to be awarded a certificate. Generally, a maximum of 33% of basic certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, a basic certificate may be completed entirely through Open University if the student has completed a Bachelor's degree and received approval from the department or school (University Policy S16-17 A). If a student has completed a Bachelor's degree and received approval from the department or school, a basic certificate may be completed entirely through Open University.

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate completion form to the Office of the Registrar. The Office of the Registrar records the completion of the program on the student's transcript.

Advanced Certificates University Requirements

Advanced certificate programs offer post-baccalaureate students coursework leading to a specific, applied, focused goal. In order to be eligible for admission to an advanced certificate, students complete an intake form or apply through CalState Apply and submit an official transcript(s) (noting the completion of a U.S. bachelor's degree from an accredited institution or the equivalent of a U.S. bachelor's degree from an accredited and/or recognized institution from a foreign country). To be admitted, students must have a minimum of 2.5 undergraduate GPA.

Students must maintain a minimum GPA of 3.0 in all advanced certificate coursework, and no course with a grade less than "C" may be counted toward the certificate. A maximum of 4 units of coursework with a grade of "C" can count toward an advanced certificate. A maximum of 4 units of coursework may be repeated. Undergraduate lower division courses are not applicable to advanced certificates.

Generally, a maximum of 33% of advanced certificate units (e.g., 3 units for a 9-unit certificate) can be completed in non-matriculated status at SJSU with approval from the department or school. In some cases, an advanced certificate may be completed entirely in non-matriculated status if the student has received approval from the department or school and the Associate Dean of Graduate Programs in the College of Graduate Studies.

A maximum of 30% of any graduate degree program units (e.g., 9 units for a 30-unit Master's degree) can be completed from another institution and/or units from Open University (including advanced certificate courses) at SJSU with approval from the department or school.

The choice of grading requirements may have implications for transferability to degree programs (University Policy S16-17).

The advisor/director of the program is responsible for verifying a student's satisfactory completion of the academic requirements established for the program and for forwarding a copy of the certificate audit completion form to the Office of Graduate Admissions and Program Evaluations. The Office of the Registrar records the completion of the program on the student's transcript.

Minors Policy

To be awarded a minor, at least 12 units of coursework must be completely distinct and separate from the coursework in the major, and coursework for the minor must include a minimum of 6 upper-division units (University Policy S16-4). Minor preparation or minor support courses do not count toward the 12 distinct units. Of the coursework for the minor, at least 6 units must be completed in residence at SJSU. The minimum aggregate GPA for all coursework required for the minor must be at least 2.0.

Courses by Department

San José State University

Accolades | Administration and Leadership | Accreditation | Colleges | Majors & Programs Statistics

Accolades

#1 Most Transformative University

Ranked by *Money* magazine in 2020 based on graduation rates, earnings and student loan repayment.

U.S. News and World Report (2024) - Regional Universities in the West

#3 Top Public Schools

#3 Most Innovative School

#3 Best Colleges for Veterans

#3 Campus Ethnic Diversity

#4 Best Regional Universities West

Wall Street Journal (2024) - National Rankings

#1 Public University for Accounting Salaries for Graduates

#2 Public University for Marketing Salaries for Graduates

#4 Public University for Data Science Salaries for Graduates

#5 Public University for Engineering Salaries for Graduates

Administration and Leadership

A Shared Vision

Leadership at San Jose State is defined by a belief that shared decision making and collaborative university governance is at the core of our culture. With this inclusive approach as a guide, President Cynthia Teniente-Matson and the university's leadership promote discussion and engagement among faculty, staff, students and the community to shape and accomplish the goals of San Jose State.

- Office of the President
- President's Cabinet
- Office of the Provost
- Academic Senate
- Associated Students

- Administration and Finance
- Information Technology
- Research and Innovation
- Staff Council
- Student Affairs
- University Advancement

Learn more about SJSU. The University's Mission and Institutional Learning Goals are incorporated into this catalog.

Accreditation

San José State University is accredited by the WASC Senior College and University Commission (WSCUC) - 1080 Marina Village Parkway, Suite 500, Alameda, CA 94501, 510-748-9001, one of the six major regional college accreditation agencies in the United States; the California State Board of Education; and by a number of other agencies in special fields. The Teacher Education programs of the University also are accredited by the California Commission on Teacher Credentialing.

- **Art and Design** - National Association of Schools of Art and Design (NASAD) [Art, Art History, Design Studies, Animation & Illustration, Graphic Design, Industrial Design, Interior Design]
- **Audiology** - Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) - [Candidacy Status only]; Accreditation Commission on Audiology Education (ACAE)
- **Clinical Laboratory Scientist Training** - National Accrediting Agency for Clinical Laboratory Sciences (NAACLS)
- **Business** - Association to Advance Collegiate Schools of Business International (AACSB)
- **Chemistry** - American Chemical Society, Committee on Professional Training (ACS-CPT)
- **Computer Science** - Accreditation Board for Engineering and Technology (ABET)
- **Dance** - National Association of Schools of Dance (NASD)
- **Dietetics** - Academy of Nutrition and Dietetics - Accreditation Council for Education in Nutrition and Dietetics (ACEND)
- **Education** - California Commission on Teacher Credentialing (CTC) (includes programs in the Department of Counselor Education, Department of Special Education, and Department of Teacher Education)
- **Engineering** - Accreditation Board for Engineering and Technology (ABET) [Aerospace, Biomedical, Chemical, Civil and Environmental, Computer, Electrical, Industrial and Systems, Materials, and Mechanical]
- **Engineering Technology** - Association of Technology, Management, and Applied Engineering (ATMAE)
- **Journalism** - Accrediting Council on Education in Journalism and Mass Communications (ACEJMC)
- **Library and Information Science** - American Library Association (ASA)
- **Music** - National Association of Schools of Music (NASM)
- **Nursing** - California Board of Registered Nursing (CA BRN) and American Association of Colleges of Nursing (AACN), Commission on Collegiate Nursing Education (CCNE)
- **Nutrition and Food Science** - Accreditation Council for Education in Nutrition and Dietetics (ACEND)
- **Occupational Therapy** - Accreditation Council for Occupational Therapy Education of American Occupational Therapy Association (AOTA)
- **Psychology** - Board of Behavioral Sciences (BBS) [Clinical Mental Health Counseling]
- **Public Administration** - National Association of Schools of Public Affairs and Administration (NASPAA)
- **Public Health** - Council on Education for Public Health (CEPH)
- **Recreation** - Council on Accreditation of Park, Recreation, and Tourism Related Professions (CAPRTRP)
- **Social Work** - Council on Social Work Education (CSWE)
- **Speech-Language Pathology** - Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAAASLP)

- **Urban and Regional Planning** - Association of Collegiate Schools of Planning, Inc. (ACSP); Planning Accreditation Board (PAB)

Colleges

Donald and Sally Lucas College and Graduate School of Business

Connie L. Lurie College of Education

Charles W. Davidson College of Engineering

College of Graduate Studies

College of Health and Human Sciences

College of Humanities and the Arts

College of Information, Data & Society

College of Science

College of Social Sciences

Majors and Programs Statistics

Degree Granting Programs

142 Undergraduate Degrees and Concentrations

96 Master's Degrees and Concentrations

4 Doctoral Degrees

30 Blended programs (Spartan Accelerated Graduate Education (SAGE) Scholars

15 Fully Online Programs

As reported to IPEDS - Integrated Postsecondary Education Data System.

- Archives and Records Administration, MARA (No Onsite Component)
- Criminology, Global Criminology Concentration, MS (Non-Mandatory Onsite Component)
- Educational Leadership, EdD (Fully Online) (No Onsite Component)
- Informatics, MS (No Onsite Component)
- Library and Information Science, MLIS (No Onsite Component)
- Multilingual and Multicultural Literacy Education, MA (No Onsite Component)
- Transportation Management, MS (No Onsite Component)

Degree Completion

- Anthropology, BA (SJSU Online) (No Onsite Component)
- Business Administration, General Business Concentration, BS (SJSU Online) (No Onsite Component)
- Economics, BA (SJSU Online) (No Onsite Component)
- Information Science and Data Analytics, BS (SJSU Online) (No Onsite Component)

- Interdisciplinary Studies, Educational and Community Leadership Concentration, BA (SJSU Online) (No Onsite Component)
- Interdisciplinary Studies, Health Care Leadership Concentration, BS (SJSU Online) (No Onsite Component)
- Public Health, BS (SJSU Online) (No Onsite Component)
- Public Relations, BS (SJSU Online) (No Onsite Component)

23 Hybrid Programs

- Aerospace Engineering, MS
- Business Administration (Early Career), MBA
- Business Administration (For Professionals), MBA
- Business Administration, Hospitality, Tourism and Event Management Concentration, BS
- Communication Studies, BA
- Counseling and Guidance, MA
- Data Analytics, MS
- Design, MDes
- Educational Leadership, Concentration in Emancipatory School Leadership, MA
- Educational Leadership, EdD (Hybrid)
- Finance, MS
- Higher Education Leadership, MA
- Information Science and Data Analytics, BS
- Medical Product Development Management, MS
- Music Education, MA
- Nursing, Concurrent Enrollment Program (CEP) ADN to BSN
- Nursing, Family Nurse Practitioner Concentration, MS
- Nursing Practice, DNP
- Occupational Therapy Doctorate, OTD
- Public Health, MPH
- Social Work, MSW
- Software Engineering, MS
- Speech Language Pathology, MS

Non-Degree Granting Programs

5 Added Authorizations

46 Certificates

20 Credentials

128 Minors

Lucas College and Graduate School of Business

Office: Business Tower 950

Telephone: (408) 924-3400

Emails: College Directory

Website: www.sjsu.edu/cob

Leadership:

Priya Kannan, Dean
Meghna Virick, Associate Dean of Undergraduate Programs
David Czerwinski, Interim Associate Dean of Graduate Programs

Overview

Since 1928, the College of Business has served the business education needs of our community. We provide San José and Silicon Valley with talent, thought leadership and service, ensuring our region's growth in the global marketplace. An institution of opportunity, our accessible, high-value education empowers and transforms the lives of people of all ages and backgrounds. Both our challenging undergraduate curriculum and our innovative graduate program in the Donald and Sally Lucas Graduate School of Business equip graduates with the tools, work ethic and skills to succeed in the ever-changing global economy.

The Donald and Sally Lucas College and Graduate School of Business is the institution of opportunity, providing innovative business education and research for the Silicon Valley region and beyond since 1928. The College offers an accessible, high value education that empowers people of all ages and backgrounds to transform their lives. Faculty and staff are strongly committed to the College's mission; maintain a collegial, inclusive teaching and learning environment; and are dedicated to continuous improvement in all areas of academic achievement, scholarship, teaching and service.

The college is an active member of the San José and Silicon Valley community and provides a talent pool, thought leadership and service that supports the region's growth in the global marketplace. The college is one of the 755 institutions worldwide that are accredited by the prestigious AACSB International, the Association to Advance Collegiate Schools of Business. Fewer than five percent of business programs worldwide have earned the AACSB's certification of excellence. In addition, the college is accredited by the WASC Senior College and University Commission (WSCUC) and the California State Board of Education.

The college is dedicated to equipping graduates with the tools, work ethic and skills to succeed in the ever-changing global economy. This is accomplished through a challenging undergraduate curriculum and an innovative, high quality graduate education in the Donald and Sally Lucas Graduate School of Business.

The Business Honors Practicum

The Business Honors Practicum provides the best students in the College of Business with the opportunity to apply what they have learned in the classroom to real business problems. Students are selected based on a combination of high GPA, prerequisites, and excellent communication skills. Students are typically placed in groups of three to work on projects at Silicon Valley businesses for college course credit. The program also includes international study trips, executive level guest speakers, and networking events. Through seminar sessions students are also exposed to current issues, ideas, and practices in their own disciplines and other fields of business. Students who complete two semesters in the program, have a 3.5 GPA or above and write a scholarly paper qualify to graduate with honors from the College of Business.

Undergraduate Business Education

The college provides a rich undergraduate education through six departments and schools - Accounting and Finance, Global Innovation and Leadership, Hospitality, Tourism and Event Management, Information Systems and Technology, Management, and Marketing and Business Analytics. Infused throughout the undergraduate program are opportunities to develop competencies in a number of key areas -- communication, teamwork, global perspectives, critical thinking, ethics, entrepreneurship, community service, and innovation. The rigorous and challenging curriculum prepares graduates to be future leaders that succeed in the global economy.

The college is building upon its existing expertise in entrepreneurship, management, global finance, accounting, and leadership and organizational change. In addition, the college showcases the best and brightest students through the Business Honors Program and the Thompson Global Internship Program.

Jack Holland Student Success Center

Email: jackholland-center@sjsu.edu

Website: <https://www.sjsu.edu/lcobssc/>

The Jack Holland Student Success Center, located on the garden level of the Boccardo Business Center, provides advice to students about undergraduate business courses and programs. Prospective students are encouraged to talk with advisors about requirements for business major and general education courses. Prospective graduate students are encouraged to meet a graduate advisor in the Graduate Program Office in the Business Tower.

Business Tutoring Centers

Peer Connections supports students through tutoring, mentoring, supplemental instructions, learning assistants and student success events in an inclusive, welcoming environment. Peer Connections serves business students in the Boccardo Business Center room BBC 303 for 1:1 tutoring and in the Business Tower room BT 053 for group tutoring sessions.

Donald and Sally Lucas Graduate School of Business

The Donald and Sally Lucas Graduate School of Business offers a high-value education with a global focus, innovative programs, and deep ties to Silicon Valley corporations and leaders. Our distinguished faculty provide a relevant business education focusing on excellence in teaching and applied research and serving the needs of diverse students from the Silicon Valley and beyond.

We offer an Early Career MBA program with three tracks: accelerated (12 months), full-time (21-24 months), and part-time (33-36 months). Our MBA for Professionals is a flexible part-time program suitable for working professionals who set their own pace. We also offer a STEM designated Master of Science in Accounting and Analytics, Master of Science in Finance, Master of Science in Taxation, and Master of Science in Transportation Management.

Department of Accounting and Finance

Office: Business Tower 850

Telephone: 408-924-3460

Email: cob-acctandfinance@sjsu.edu

Website: www.sjsu.edu/acctfin

Professors

Billy J. Campsey
Jang Hyung Cho
Elizabeth Grace, Chair
Daoping (Steven) He
Esperanza Huerta-Espinosa
Stoyu Ivanov

Annette Nellen
Yao Tian
Jian Zhang

Associate Professors

Benjamin Anderson
Maria Bullen
Joel Busch
Caroline Chen
Artem Meshcheryakov
Colin Onita
Tijana Rajkovic

Assistant Professors

Kouros Amirkhani
Isarin Durongkadej
Matthew Faulkner
Danielle Lazerson
Emmanuel Sequeira
Salman Tahsin
Julian Vogel
Fangjun (Julie) Xiao

Overview

The Accounting and Finance Department teaches students broadly in the areas of accounting, finance, and accounting information systems. The curriculum develops analytical mindsets and technical competencies needed to prepare, analyze, and interpret data, make sound financial decisions, and communicate to stakeholders. Extensive career prospects, breadth of concentration choices, and numerous experiential and networking opportunities make admission to this department and its concentrations highly competitive.

Department of Hospitality, Tourism and Event Management

Office: Business Tower 550

Telephone: 408-924-3000 (Voice); 408-924-3061 (Fax)

Email: hospitality@sjsu.edu

Website: www.sjsu.edu/hspm

Professors

Tsu-Hong Yen, Chair

Associate Professors

Jooyeon Ha
Yinghua Huang

Assistant Professors

Jie Gao

Overview

Where better to study hospitality management than in the heart of Silicon Valley, San Jose, California and the Bay Area? Thanks to our world-renowned high tech companies, and vibrant metropolitan location, we attract millions of national and international visitors each year. According to a recent CSU impact report, hospitality ranks as one of the state's top growth industries, ensuring that the demand for hospitality professionals will only increase. Our innovative, technology-driven curriculum and faculty provide the theoretical, practical, and professional training students need to pursue successful and meaningful careers. Our Bachelor of Science in Business Administration concentration in Hospitality, Tourism and Event Management pairs academic study with hands-on experience and internships. Our graduates find employment as hotel/resort general managers, restaurant managers, private club managers, controllers, sales and marketing managers, human resources managers, concierge, catering and corporate event coordinators/producers, and convention and tradeshow managers. Come join our team!

Department of Marketing and Business Analytics

Office: Business Tower 750

Telephone: 408-924-3506

Email: Contact the Department Staff

Website: www.sjsu.edu/mktba

Professors

Jennifer Bechkoff
David Czerwinski
Marilyn Easter
Jeffrey A. Fadiman
Kenneth C. Gehrt
Therese Louie
Michael Merz, Chair
Mahesh Rajan
Jing Zhang

Associate Professors

Michael Klein
Hyo Jin Lee
Mahboubeh Madadi
Miwa Merz
Robert Sibley
Shaonan Tian
Gema Vinuales

Assistant Professors

Ravi Agarwal
Egbe-Etu Etu
Mithila Guha
Kezban Yagci Sokat

Overview

Students interested in a career in marketing or business analytics can choose from one of two concentrations in the Department of Marketing and Business Analytics. A concentration in Marketing prepares students to pursue a career in a number of different areas such as sales and promotion, marketing management and social media marketing, in just about any sector.

For students interested in quantitative approaches to business decision-making, the Department of Marketing and Business Analytics offers a concentration in Business Analytics that prepares students to pursue a career as business analyst in any area (e.g., marketing analyst, financial analyst), in just about any sector.

Lucas Graduate School of Business

Office: Business Tower 350

Telephone: 408-924-3420

Email: lucas-school@sjsu.edu

Website: www.sjsu.edu/lucasgsb

The Donald and Sally Lucas Graduate School of Business offers the following graduate degree programs:

- Master of Business Administration
 - Early Career MBA
 - MBA for Professionals (Special Session)
- Master of Science in Accounting and Analytics
- Master of Science in Finance
- Master of Science in Taxation (Special Session)
- Master of Science in Transportation Management (Special Session)

All of the Lucas School's business degree programs are accredited by AACSB International - The Association to Advance Collegiate Schools of Business.

Mission of the Donald and Sally Lucas Graduate School of Business

The Lucas School provides advanced business and professional education to high potential individuals with diverse backgrounds and work experiences. We prepare our graduates to make responsible, personally enriching, and professionally advantageous decisions. The Lucas School's business programs bring together an interesting mix of full-time and part-time students from a variety of academic, career, and cultural backgrounds. Given SJSU's Silicon Valley location, students come to the classroom with a wealth of real-world experience, including technical expertise (in engineering or software, for example), and a desire to develop business acumen, advance in managerial positions, or deepen their knowledge base.

Our Programs

The programs are innovative in design and delivery and offer a range of academically challenging and multi-disciplinary opportunities that enable students to improve and keep pace continuously within the dynamic Silicon Valley environment.

1. The **Master of Business Administration** provides advanced management education with the opportunity for a generalist degree. The Lucas MBA programs offer high caliber applied learning in an enriching

environment thoroughly integrated with the Silicon Valley Experience. Courses are taught by an optimal faculty mix of academics involved in cutting edge research and professionals with extensive experience in the mosaic of businesses that constitute Silicon Valley. Students are exposed to leading business practices in the classroom and networking opportunities as an integral part of an innovative educational experience. The Lucas MBA programs consist of forty-two semester units including thirty units of core courses and twelve units of elective courses. Within an MBA program, all students complete the same core courses whereas the elective courses are selected depending on the individual's interests and learning objectives.

1. The Early Career MBA is a program tailored for individuals with limited professional work experience (0-5 years). Classes are conducted in a hybrid format, with a mix of in-person classes and live online classes. In-person class sessions meet on the vibrant San José State University Campus where students have access to a wealth of resources. Courses typically meet evenings and Saturdays in eight-week sessions during the Fall and Spring semesters and five-week sessions during the Summer semester. Students follow a pre-set sequence of core courses and select elective courses depending on their individual interests. An approved three unit Internship may count as one of the elective courses. This unique MBA program offers three different tracks that vary in length and pace:
 - Accelerated Track - Designed for individuals who are willing to follow a very intense academic pace and wish to complete their MBA degree in 12 months.
 - Full-Time Track - Designed for individuals who are interested in completing their MBA degree in 21-24 months. The full-time track is ideal for international students and complies with all student visa requirements.
 - Part-Time Track - Designed for individuals who are working in full-time professional positions and are interested in completing their MBA degree in 33 to 36 months.
2. The MBA for Professionals is a Special Session program that is tailored for individuals with extensive professional work experience (5+ years). Offering a high level of flexibility, this program accommodates students with demanding work and life schedules. Classes are conducted in a hybrid format, with a mix of in-person classes and live online classes. In-person class sessions meet on the vibrant San José State University Campus where students have access to a wealth of resources. The diverse educational and professional backgrounds of the students makes the Silicon Valley Experience for Professionals an integral part of the MBA curriculum. Courses typically meet evenings and Saturdays in eight-week sessions during the Fall and Spring semesters and five-week sessions during the Summer semester, with some elective courses available online. Students are able to choose and adjust the pace at which they complete their degree. This program can be completed in 2 to 3 years.
2. The MS - Accounting and Analytics (MSAA) is a STEM designated program that prepares students for careers in public, corporate, and governmental accounting. Students develop and apply an analytics-oriented mindset to audit, tax, advisory and managerial scenarios. Coursework is structured to combine academic learning and accounting internship experience in a well-rounded preparation for careers in professional accounting. The program balances technical study and preparation for the CPA exam with business soft skills needed for recruitment and a career in accounting. The 30-unit program admits both accounting and non-accounting undergraduate majors in a competitive process. Non-accounting undergraduate students have the opportunity to prepare for the program in a 15-unit summer certificate program preceding fall enrollment in the MSA. Courses are taught in a hybrid format with a mix of live online and in-person classes. In-person classes meet on the San Jose State University Campus.
3. The MS - Taxation (MST) is a Special Session program that offers students technical tax knowledge, an understanding of tax policies and research and analytical skills development. Study of the tax law is enhanced through discussion of related accounting, legal and financial concepts and issues. The academic calendar is designed around the scheduling needs of working tax professionals. The extensive range of courses allows students flexibility in career specialization. The MST courses are offered on the San José State University Campus.
4. The MS - Transportation Management (MSTM) is a Special Session program that provides opportunities for individuals from both technical and non-technical disciplines to obtain advanced specialization in surface transportation management. The program draws on the latest in transportation policy, administration and management concepts from several disciplines, and enables students to develop a fuller understanding of

the diverse and sometimes conflicting needs of modern transportation management for better serving their employers, community and society. The degree is available through distance-learning facilities and online video-conferencing.

School of Global Innovation and Leadership

Office: Business Tower 450

Telephone: 408-924-6880

Email: Contact the School Director, Analyst, or Coordinator

Website: www.sjsu.edu/sgil/

Professors

Anuradha Basu
Tanvi Kothari
Arvinder Loomba
Asbjorn Osland
Taeho Park, Director
Xiaohong Quan
Carol Reade
Yan Diana Wu
Ming Zhou
Shu Zhou

Associate Professors

Nathaniel Lupton
Sarika Pruthi
Yan Diana Wu
Shu Zhou
Tianqin Shi

Assistant Professors

Virpi Outila

Overview

The School of Global Innovation and Leadership prepares students to become innovative leaders with a global perspective in one of three concentrations: Operations and Supply Chain Management, Entrepreneurship and International Business. All three concentrations provide students with cutting-edge knowledge and opportunities for practice and skill development.

School of Information Systems and Technology

Office: Business Tower 250

Telephone: 408-924-7790

Email: Contact the School Director or Department Analyst

Website: www.sjsu.edu/isystems

Professors

Nitin Aggarwal
Leslie Albert, Director
Subhankar Dhar
Timothy Hill
Malu Roldan
Ashraf Shirani

Associate Professors

Scott Jensen
Yu Chen

Assistant Professors

Yasin Ceran
Jalal Sarabadani
Ellen Zhen

Overview

The School of Information Systems and Technology is home to the Management Information Systems (MIS) concentration within the Business major. The School is distinguished by a team of award-winning instructors spanning both academic and industry perspectives and a curriculum reflecting the best practice recommendations of the Association of Information Systems as well as the local business environment in Silicon Valley. The MIS program prepares students to excel professionally and contribute meaningfully to the knowledge/information economy of the 21st century.

School of Management

Office: Business Tower 650

Telephone: 408-924-3550

Email: schoolofmanagement@sjsu.edu

Website: www.sjsu.edu/mgmt

Professors

Susanna Khavul, Director
Simon Rodan
Nancy Da Silva
Monica Gavino
Gita Mathur
Elisa Mattarelli
Sumita Raghuram
Meghna Virick
Robert C. Wood

Associate Professors

Gretchen Vogelsang Lester
Elizabeth Mullen
Alaka Rao
Chunlei Wang

Assistant Professors

Thomas Altura
Matthew Maguire
Lucy Headrick
Yeonka Kim

Overview

The School of Management offers two concentrations - Management and Human Resource Management. The Management concentration provides students with opportunities to develop technical, interpersonal, communication, and decision-making skills to effectively carry out management functions. Graduating with this concentration leads to occupations such as project managers, consultants, and entry level managers. The Human Resource Management concentration focuses on how to maximize the efforts and productivity of employees within organizations. This concentration provides students the opportunity to acquire HR positions such as HR generalists, recruiters, and compensation analysts.

Connie L. Lurie College of Education

Office: Sweeney Hall

Telephone: (408) 924-3600

Email: luriecollege@sjsu.edu

Website: www.sjsu.edu/education

Leadership:

Heather Lattimer, Dean
Mark Felton, Associate Dean of Research

Overview

The Connie L. Lurie College of Education is a professional community of students, faculty and staff engaged in supportive partnerships to serve a community of culturally diverse children, youth and families by pursuing and promoting scholarly and reflective inquiry, and access to a quality lifelong education. Faculty, staff and graduates are compassionate and ethical professionals who are mindful of our responsibilities in a democratic society. The College's core values are excellence and equity. Excellence is manifested in the rigor of our academic programs, in our teacher/scholar faculty contributions, and in the high level of staff service. We challenge our students to strive for excellence in their academic and personal pursuits, as informed and active citizens in their own communities. To achieve equity, our students, faculty, and staff continuously work for social justice and educational opportunities for all members of our society.

The college offers Bachelor's and Master's degrees, a doctoral program, and numerous professional credentials. Programs are offered through six academic departments.

- Child and Adolescent Development
- Communicative Disorders and Sciences
- Counselor Education
- Educational Leadership
- Special Education
- Teacher Education

The college, housed in William Sweeney Hall, offers a variety of resources including the Student Success Center, the Kay A. Armstead Center for Communication Disorders and the Child Development Laboratory Preschool, as well as two computer laboratories that are open to both undergraduate and graduate students. Students also have access to other high tech education applications.

Student Service Centers

The Kay A. Armstead Center for Communication Disorders provides speech-language-hearing evaluations and therapy services to students, staff, faculty, and the local San Jose community.

The Child Development Laboratory Preschool includes the Toddler and Multi-Age Labs on the SJSU campus. These programs provide undergraduates with both observation and hands-on clinical/practicum opportunities and engagement.

The Credential Services Office recommends candidates for their credentials upon program completion. Additionally, the office provides resources and services to aid in meeting various requirements, including basic skills, subject matter competency, and other prerequisites for program admission and completion. Information regarding elementary (Multiple Subject), secondary (Single Subject), and special education (Education Specialist) teaching credentials, alongside other service credentials and certificate programs, is readily accessible.

The Lurie College Student Success Center provides in-person and virtual academic advising for undergraduate students majoring or intending to major in any of the departments in the College of Education. The Student Success Center team provides academic planning, including General Education (GE), university policies and procedures, change of major/minor, academic notice, disqualification, and reinstatement. We promote lifelong learning and provide students with resources to make informed decisions about their academic and career goals. We are committed to creating a clear path to graduation and student success.

Advising

Advising and information related to applications are handled through the six academic departments.

These departments include Child and Adolescent Development, Communicative Disorders and Sciences, Counselor Education, Educational Leadership, Special Education, and Teacher Education.

Department of Child and Adolescent Development

Office: Sweeney Hall 201

Telephone: 408-924-3718 (Voice); 408-924-3758 (Fax)

Email: childdev@sjsu.edu

Website: www.sjsu.edu/chad

Professors

Maureen C. Smith
Emily Slusser
Nadia Sorkhabi

Associate Professors

Maria Fusaro
Dina Izenstark
Robin L. Love
Cara Maffini
Ravisha Mathur, Chair
Danielle Mead-Nytko
Ellen Middaugh
Kim Tsai

Assistant Professors

Janet Bang
Robert Marx

Overview

Interested in becoming an elementary school teacher? An early childhood educator? An advocate working with agencies to serve children, youth, and families? A degree in child and adolescent development is excellent training for careers involving children and families. Or perhaps you already possess entry-level credentials, already work with children and youth and want to advance your career. A wide range of professionals - from childcare administrators to parent educators, child/youth advocates to child and family counselors; to pediatric nurses to healthcare workers - have gained the knowledge and expertise they needed to move ahead in the workplace through our bachelor's and master's degree programs. ChAD's curriculum incorporates theory, research, policy and practice, providing students with a comprehensive understanding of children and adolescents. The department offers hands-on training with numerous activities in community agencies and the department's campus laboratory preschool. Students graduate as well-informed, responsible individuals, sensitive to the commonalities and diversities of the world and its people.

Honors Program

Students who are majoring in Child and Adolescent Development and have maintained a 3.5 GPA in the major are eligible to apply to the Child and Adolescent Development Honors Program. Once accepted into the program, students must enroll in CHAD 199 - Honors in Child & Adolescent Development. Students who maintain the required GPA and successfully complete CHAD 199 will graduate with Honors in Child and Adolescent Development. Interested students should contact the Child and Adolescent Development department for more information.

Department of Communicative Disorders and Sciences

Office: Sweeney Hall 115

Telephone: 408-924-3688 (Voice); 408-924-3641 (Fax)

Email: communicative-disorders-sciences@sjsu.edu

Website: www.sjsu.edu/cds

Professors

Paul Cascella
Nidhi Mahendra
Wendy Quach

Associate Professors

Pei-Tzu Tsai

Assistant Professors

Eun-Ae Choi
Eduardo Europa
Marcella McCollum

Overview

The mission of the Department of Communicative Disorders and Sciences is to prepare creative, evidence-informed, critical thinkers and change agents for a profession in speech-language pathology and related fields. This work prioritizes clinical education and research that reflect, elevate, and advocate for the interests and needs of our diverse communities. We do this with a culturally responsive and student-centered focus. One of the first Communicative Disorders and Sciences programs in California, the department has prepared students for careers as speech-language pathologists and audiologists for more than 50 years. Speech-language pathologists identify, evaluate, and provide interventions for children and adults with speech, language, cognitive-communicative, and swallowing disorders. Audiologists diagnose and treat individuals with hearing and balance disorders. Our academic and pre-clinical undergraduate curriculum provides the basis for further graduate study, required for a career in speech-language pathology and audiology. Our Master's Degree program in Speech Language Pathology is accredited by the Council on Academic Accreditation of the American Speech-Language and Hearing Association and by the California Commission on Teacher Credentialing. Members of the SJSU community and the larger community receive speech, language, and hearing services at the Kay Armstead Center for Communicative Disorders (KACCD).

Department of Counselor Education

Office: Sweeney Hall 404

Telephone: 408-924-3634 (voice); 408-924-4137 (fax)

Website: www.sjsu.edu/counselored/

Professors

Kyoung Mi Choi
Xiaolu Hu
Jason Laker, Chair
Dolores Mena

Assistant Professors

Lorri Capizzi
Grace Poon Ghaffari
Zachary McNiece
Aubrey Uresti

Overview

The Counselor Education Department prepares individuals to work as counselors in culturally and economically diverse K-12 schools, postsecondary education settings, and community-based organizations. The department offers a Master's degree in Counseling and Guidance, with specializations in K-12 School Counseling [including a Pupil Personnel Services (PPS) School Counseling Credential, and a Child Welfare and Attendance (CWA) authorization], Higher Education, and Professional Clinical Counseling. Faculty work closely with graduate students to build effective counseling and assessment skills; nurture reflective thinking and intercultural awareness; and provide the experiences needed to become dynamic, culturally-sustaining counselors who are committed to advocacy, social justice, and lifelong learning. Graduates are prepared to support the personal growth, holistic wellness, and healthy development of individuals and groups through counseling approaches that are strengths-based and grounded in theory, research, and effective practices.

Please see the Counselor Education Department website for most current program offerings and requirements.

Department of Educational Leadership

Office: Sweeney Hall 401

Telephone: 408-924-3616

Email: edleadership@sjsu.edu

Website: sjsu.edu/edleadership

Professors

Rebeca Burciaga

Arnold Danzig

María Ledesma, Chair

Assistant Professor

Liliana Castrellón

Veneice Guillory-Lacy

Edd Program Core Faculty

Allison Briceno | Associate Edd Program Director and Professor, Teacher Education

Rebeca Burciaga | Professor, Educational Leadership

Liliana Castrellón | Assistant Professor, Educational Leadership

Arnold Danzig | Professor, Educational Leadership

Brent Duckor | Professor, Teacher Education

Deanna Fassett | Professor, Communication Studies

Maria Fusaro | Associate Professor, Child and Adolescent Development

Veneice Guillory-Lacy | Assistant Professor, Educational Leadership

Lara Kassab | Associate Professor, Teacher Education

Sudha Krishnan | Assistant Professor, Special Education

Saili Kulkarni | Associate Professor, Special Education

María Ledesma | Department Chair and Professor, Educational Leadership

Cara Maffini | Associate Professor, Child & Adolescent Development

Roxana Marachi | Professor, Teacher Education

Robert Marx | Assistant Professor, Child & Adolescent Development

Kathleen McConnell | Professor, Communication Studies

Dolores Mena | Professor, Counselor Education

Ellen Middaugh | Edd Program Director and Associate Professor, Child and Adolescent Development

Nikos Mourtos | Professor, Aerospace Engineering

Eduardo Muñoz-Muñoz | Associate Professor, Teacher Education

Rachel O'Malley | Professor, Environmental Studies

Luis Poza | Associate Professor, Teacher Education

Ferdie Rivera | Professor, Mathematics and Statistics

Lisa Simpson | Department Chair & Associate Professor, Special Education

Emily Slusser | Professor, Child and Adolescent Development
Grinell Smith | Professor, Teacher Education
Megan Thiele | Associate Professor, Sociology
Kim Tsai | Associate Professor, Child & Adolescent Development
Tammie Visintainer | Assistant Professor, Teacher Education
David Whitenack | Department Chair and Professor, Teacher Education

EdD Program Affiliated Faculty

Seth Corrigan | Lecturer, Educational Leadership
Roxane Fuentes | Lecturer, Educational Leadership
Michael Gallagher | Lecturer, Educational Leadership
John Pappalardo | Lecturer, Educational Leadership
Noni Reis | Emerita Professor, Educational Leadership
Shelly Viramontez | Lecturer, Educational Leadership

Overview

The Department of Educational Leadership prepares leaders to champion anti-racist and emancipatory approaches to leadership. We equip our graduates with the skills, knowledge, and experience to engage with and learn from the community cultural wealth of the diverse communities we serve.

The department offers undergraduate, masters, doctoral, and certificate programs. The Ed.D. program in Educational Leadership emphasizes social justice and human centered approaches to educational leadership. The program builds on the view that educational leaders serve in learner-centered systems in which inquiry, learning, equity and social justice, and human care are central concerns. The program's vision is to prepare the next generation of leaders with the knowledge, skills, and dispositions necessary to understand the causes of inequitable outcomes in PK-12 and higher educational institutions. Students in this program assess and develop pedagogies, practices, policies, and curricula that hold the potential to improve the life chances of all students, especially minoritized students.

The department offers a streamlined pathway from the MA to the Ed.D. to students in the Emancipatory School Leadership Program (MELS) and the Higher Education Leadership Program (HELM). Eligible students must be currently enrolled in the MELS or HELM program in good academic standing, with no probation and/or academic notices, and with intentions to pursue an Ed.D. in Educational Leadership.

Department of Special Education

Office: Sweeney Hall 204 (Department of Special Education)

Telephone: 408-924-3700 (Voice); 408-924-3701 (Fax)

Email: specialed@sjsu.edu

Website: www.sjsu.edu/specialed

Professors

Peg Hughes
Hyun-Sook Park

Associate Professor

Lisa Simpson, Department Chair
Andrea Golloher
Saili Kulkarni

Assistant Professors

Sudha Krishnan

Overview

The SJSU Department of Special Education prepares candidates to be transformative leaders in the field, and lifelong learners who respond to racism, ableism, bigotry, and prejudice in their schools and communities. To this end, we center anti-racist and anti-ableist policies and practices in our teaching, research, and service to disrupt systemic racism that has historically prevented full inclusion and equity for students with disabilities including our BIPOC (Black, Indigenous, People of Color) students, staff, and faculty. We engage culturally sustaining pedagogies and the principles of UDL in our coursework and fieldwork, partnering with our local districts to push for the success of students with disabilities in inclusive settings.

The Department of Special Education offers a Master's of Arts in Special Education as well as three Preliminary Education Specialist Teaching Credentials: Mild/Moderate Support Needs, Extensive Support Needs, and Early Childhood Special Education. Students have the option to complete the program as a traditional student, an intern student or as part of a Teacher Residency Program. The SJSU Education Specialist credential programs are accredited by the California Commission on Teacher Credentialing and students must meet requirements set forth by this agency and the state of California in order to earn a teaching credential, which include meeting testing and fieldwork requirements in addition to SJSU coursework.

Department of Special Education Credential Programs Admission Requirements

1. CSU Apply application with statement of purpose.
2. Bachelor's degree from a regionally accredited institution of higher education.
3. Grade point average (GPA) of at least 2.75 in last 60 units of coursework.
4. 45 hours of Pre-professional experience.
5. Certificate of Clearance (fingerprint clearance) from California Commission on Teacher Credentialing (CTC).
6. Two letters of recommendation.
7. Verification of Basic Skills or the California Basic Education Skills Test (CBEST) - submit by end of first semester in program.
8. Verification of Subject Matter Competency or California Subject Examination for Teachers - submit by end of first semester in program.

Upon review of submitted document applicants may be called for a department interview. Additional requirements must be met for candidates to be eligible for the Intern Program. Applicants are encouraged to attend a department information session for more information about the application process and program offerings. Students must complete each class with a B or higher and maintain a GPA of 3.0 in the program.

Department of Teacher Education

Office: Sweeney Hall 305

Telephone: 408-924-3771

Email: teacher-education@sjsu.edu

Website: www.sjsu.edu/teachered/

Professors

Katya Aguilar

Brent Duckor

Mark K. Felton

Roxana Marachi
Colette Rabin
Grinell Smith
Patricia Swanson
David A. Whitenack, Chair

Associate Professors

Allison Briceño
Lara Ervin-Kassab
Eduardo Muñoz-Muñoz
Luis Poza
Wanda Watson

Assistant Professors

Tiffani Marie
Kathryn Ribay
Sandra Zuniga Ruiz
Tammie Visintainer

Overview

The Teacher Education Program (TED) at San José State University is California's oldest public teacher preparation program. We are committed to preparing the highest quality PK-12 educators, with knowledge, skills, dispositions, and ethics to teach students in our culturally diverse and technologically complex global communities. Teaching is a reliable and rewarding profession for those desiring to influence the lives of children and adolescents. TED prepares teachers who focus on students and their learning needs through culturally sustaining pedagogy, antiracist practices, and other asset-oriented approaches to emancipatory education.

TED offers preparation for PK-3 ECE Specialist Instruction (Pre-kindergarten - Grade 3, pending approval), Multiple Subject (Transitional Kindergarten - Grade 8) and Single Subject (middle and high school) teaching credentials that allow graduates to teach preschool, elementary, middle, and high school students in a California public school. These programs are post-baccalaureate, offered at the graduate level, and are accredited by the CCTC (California Commission on Teacher Credentialing). TED offers a teaching credential-only option (in PK-3 ECE, Multiple Subject, or Single Subject) or a teaching credential plus a Master of Arts in Teaching (MAT) degree. For experienced teachers, a Reading and Literacy Leadership Specialist Credential program with a Master of Arts in Multilingual and Multicultural Literacy Education degree is offered. Undergraduate pathways to the PK-3 ECE (pending approval), Multiple Subject, or Single Subject credential are available through ITEP and SAGE programs.

Bilingual Authorization program options are available in Spanish, Mandarin, and Vietnamese; they may also be available in other Asian languages upon request.

Undergraduate students intending to enter a teaching credential program should view the Teacher Preparation section of the catalog for more information.

Charles W. Davidson College of Engineering

- Overview
- Engineering Student Success Center (ESSC)
- MESA Engineering Program (MEP)
- Preparation for Engineering Programs
- Preparation for Technology and Aviation Programs
- Progress to Degree Requirements

- General Education Requirements
- Undergraduate Programs Offered
- Graduate Programs Offered

Office: Engineering Building 493

Telephone: (408) 924-3800

Email: engineering@sjsu.edu

Website: engineering.sjsu.edu

Leadership:

Sheryl Ehrman, Dean

Nicole Okamoto, Associate Dean for Undergraduate Programs and Student Success

Raymond Yee, Associate Dean of Extended Studies

Xiao Su, Associate Dean of Graduate Studies and Research

Overview

The Charles W. Davidson College of Engineering offers undergraduate and graduate programs in Aerospace Engineering; Aviation (BS only); Biomedical, Chemical and Materials Engineering; Civil and Environmental Engineering; Computer and Software Engineering; Electrical Engineering; Engineering Technology, Interdisciplinary Engineering; Industrial and Systems Engineering; and Mechanical Engineering. Additional graduate programs are offered in Artificial Intelligence, Engineering Management, Human Factors/Ergonomics, and Quantum Technology. Each department offers a variety of major and minor programs which are identified in their respective parts of this catalog.

Engineering Student Success Center (ESSC)

Office: Engineering Building 116

Telephone: 408-924-3990

Email: success-engineering@sjsu.edu

Website: www.sjsu.edu/essc

The mission of the Engineering Student Success Center (ESSC) is to empower engineering students from application to graduation, support their academic and personal growth, and engage them as lifetime members of the college learning community. The ESSC will provide programs and advising for undergraduate and graduate students in the College of Engineering that support students' smooth transition to SJSU, their transformation into active learners and owners of their academic careers, and promote their personal and professional development.

The Community for Engineering Learning and Living (CELL) is a themed living community offered by the University Housing Services for first year engineering students. CELL's objectives are to provide a cooperative learning environment, to encourage and build the engineering community and to foster a sense of belonging and responsibility to the community. Through facilitated study groups, CELL students will experience the academic support and cooperation of a community committed to academic success. CELL students will have regular access to faculty, advisors and industry professionals through workshops and programs. CELL is about shared experiences and creating a vibrant and caring engineering community.

MESA Engineering Program

Office: Engineering Building 366

Telephone: 408-924-3830

Email: mesa.engineering@sjsu.edu

The MESA Engineering Program and the Women in Engineering Program work to increase the number of graduates entering the engineering profession from traditionally under-represented and economically disadvantaged groups. The MESA Engineering Program actively recruits students, provides support services until graduation and acts as liaison with companies offering employment experiences. It assists students with admissions, academic and personal counseling, financial aid and scholarships, and registration. The MESA Engineering Program also maintains a study center for tutoring, workshops, individual and group study and social functions. A summer job placement program assists students in obtaining jobs in industry.

Preparation for Engineering Programs

To prepare for engineering, the high school student should take as much advanced math and science as possible, as well as high school engineering and technology courses that may be available at their school. Students with scores of 3 or above on the AP Calculus exams may be able to reduce the number of math courses taken at SJSU; students who are not calculus-ready on entrance may take a longer time to graduate. Students transferring from California community colleges will be given junior level standing in the major if they have successfully completed the following course work:

- 12 semester units of calculus and differential equations
- 5-10 semester units of chemistry
- 8-13 semester units of physics which require calculus as a prerequisite
- 10-14 units of lower division engineering appropriate to their engineering major

All engineering majors require certain coursework (typically two semesters of calculus and one of calculus-based physics) before transfer. Completion of supplemental major-specific coursework will result in improved chances for admission and shorter time to graduation. The list of required and supplemental courses for each major can be found [here](#). Transfer students should use assist.org or this SJSU online catalog to determine the specific lower division requirements of their major. Graduation following two academic years of study is possible if the student completes all lower division units before transfer, satisfactorily completes the required upper division coursework and remains in good standing in the major.

Preparation for Technology and Aviation Programs

To prepare for technology and aviation majors, the high school student should take industrial technology classes such as electronics, computer-aided design, and manufacturing, or any engineering classes offered at their school, and should complete courses in physics, chemistry, and pre-calculus or calculus. Community college students are urged to complete as many of the lower division requirements as possible in chemistry, physics, mathematics and technology or aviation at the community college.

Progress to Degree Requirements

All College of Engineering undergraduates are required to stay in good standing in their major by maintaining a Major GPA of 2.0 or above. The Major GPA includes all courses required for the major, including both lower and upper division math, science, engineering, technology, aviation or business courses required by their major. Some departments have additional grade requirements for individual courses, groups of courses or all courses taken in their department. See departmental sections for these requirements. Additional university GPA requirements are specified elsewhere in this catalog. The Engineering Major Academic Notice Policy can be found on the Engineering Student Success Center website.

Incoming Engineering frosh, or other students seeking to change major into Engineering, must complete MATH 30 (or 30X), MATH 31 (or 31X) and PHYS 50 within their first 60 units at SJSU. Change of major information can be found on the Engineering Student Success Center website.

General Education Requirements

Of the 51 units required by the university up to 30 units may be satisfied by specified major and support requirements for most programs. Most engineering majors may satisfy the remaining units by taking AMS 1A-AMS 1B or courses covering similar requirements (12 units), ENGL 1A (3 units), Oral Communication (3 units) and Ethnic Studies (3 units). Transfer students may satisfy core GE through the IGETC or CSU breadth requirements. Students should consult advisors in the Engineering Student Success Center for details for their specific programs.

Undergraduate Programs Offered

The College of Engineering offers BS degrees in:

- Aerospace Engineering, BS
- Aviation, BS
- Biomedical Engineering, BS
- Chemical Engineering, BS
- Civil Engineering, BS
- Computer Engineering, BS
- Electrical Engineering, BS
- Engineering Technology, Computer Network System Management (CNSM) Concentration, BS
- Engineering Technology, Manufacturing Systems Concentration, BS
- Industrial and Systems Engineering, BS
- Interdisciplinary Engineering, BS
- Interdisciplinary Engineering, BS (SJSU Online) (Currently Not Accepting Students)
- Materials Engineering, BS
- Mechanical Engineering, BS
- Software Engineering, BS

Please see the Majors and Programs or Colleges and Departments listings in this catalog for information about each undergraduate major.

Graduate Programs Offered

The College of Engineering offers graduate work leading to Master of Science degrees in:

- Aerospace Engineering, MS
- Artificial Intelligence, MS
- Biomedical Engineering, MS
- Biomedical Engineering, Biomedical Devices Concentration, MS
- Chemical Engineering, MS
- Civil Engineering, MS
- Computer Engineering, MS
- Electrical Engineering, MS
- Engineering Management, MS
- Engineering Technology, MS

- Engineering, Electronic Materials and Devices Concentration, MS (Discontinued Eff Fall 2024)
- Engineering, MS
- Human Factors/Ergonomics, MS
- Human Factors/Ergonomics, User Experience Concentration, MS
- Industrial and Systems Engineering, MS
- Materials Engineering, MS
- Mechanical Engineering, MS
- Quantum Technology, MS (offered jointly by Departments of Electrical Engineering and Physics and Astronomy)
- Software Engineering, MS

Graduate work offered by the College of Engineering reflects and supports the advanced scientific and technological endeavor which is typical of California industry, government and business.

Departmental curricula provide full- and part-time students the opportunity either to obtain master's degrees or to take specialized courses to improve job capabilities.

The Master of Science in Engineering offered by the Interdisciplinary Engineering program has unique, interdisciplinary characteristics which may be particularly appealing to persons with a bachelor's degree in engineering who are currently working in a technical management area and wish to extend their education.

For students whose native language is not English please see the English Language Proficiency (ELP) test requirements on the Graduate Admissions website. Students who meet this and the requirements for admission to the Graduate Division as outlined in this catalog should see individual department listings for requirements for admission to classified standing, conditionally classified standing and advancement to candidacy for the specific degree in engineering.

In addition to departmental requirements, the University requires that all graduate students demonstrate competency in written English as a condition for advancement to candidacy. Please refer to the SJSU catalog section titled "Graduation Writing Assessment Requirement (GWAR)" for details. Each graduate program has a designated GWAR course embedded within the program degree requirements. In addition, all graduates must complete an acceptable thesis, project or comprehensive examination.

Engineering Extended Studies (EES)

Engineering Extended Studies (EES) Department at San Jose State University within the Charles W. Davidson College of Engineering supports innovative programs and continuous learning in a climate of constant disruption.

Department of Aerospace Engineering

Office: Engineering Building 272

Telephone: 408-924-3965

Website: www.sjsu.edu/ae

Professors

Nikos J. Mourtos, Chair

Periklis Papadopoulos

Associate Professors

Maria Chierichetti, Associate Chair

Assistant Professors

Yawo Ezunkpe
Edoardo Rubino

Overview

Aerospace engineers research, design, and develop high-speed transportation vehicles, such as airplanes, spacecraft, space stations, planetary vehicles, and space probes. Approximately half of all aerospace engineers work in the aerospace industry (e.g. Boeing, Lockheed-Martin, Cessna, etc.), 15% work for government agencies (e.g. NASA, Department of Defense, etc.), and the rest work in engineering services, research, testing, and navigation functions. Aerospace engineers also work in industries not associated with aerospace, such as automotive, where they work on the improvement of the aerodynamics of automobiles, as well as in other areas, as allowed by the breadth of their preparation. Students in our program have opportunities to participate in international design-build-fly competitions (e.g. AIAA Design-Build-Fly, SAE Aero Design, Spaceport America Cup) or work with NASA engineers to design-build-test and launch microsatellites into space (NASA TechEdSat). The Aerospace Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Aerospace and Similarly Named Engineering Programs Program Criteria.

Department of Aviation and Technology

Office: Industrial Studies 111
Telephone: 408-924-3190
Website: <https://www.sjsu.edu/avtech/>

Professors

Fred Barez, Chair (Aviation and Technology)
Wenben Wei (Aviation)

Associate Professors

David Yan (Technology)

Assistant Professors

Armin Maraghehmoghaddam (Technology)

Overview

Aviation

The largest provider of aviation degrees on the West Coast, the Aviation program in the Department of Aviation and Technology prepares students for careers as professional pilots, airport managers, flight operations professionals, and other aviation industry professionals. Students receive hands-on experience in both basic and advanced aviation principles and procedures, including aircraft design, aviation safety, air traffic control, and legal and labor issues in national and international aviation. Bachelor's degree candidates have the option to focus on professional flight, flight operations, aviation management, or maintenance management—a specialty that complements an AS-level Federal Aviation Administration (FAA)-approved community college (A and P) maintenance program. Aviation classes are held both on campus and off-site at our Reid-Hillview Airport facility.

Technology

Choose a career in applied engineering design and management focused on computer network systems and advanced manufacturing systems. Two undergraduate Engineering Technology programs, accredited by the Association of Technology, Management, and Applied Engineering (www.ATMAE.org), are offered by the Department of Aviation and Technology: an Engineering Technology BS with a concentration in Computer Network System Management (CNSM) and an Engineering Technology BS with a concentration in Manufacturing Systems. The Department also offers graduate work leading to the Master of Science in Engineering Technology (MSET) with specializations in Applied Network Systems and Smart Manufacturing.

Note to Veterans

Those students who have successfully completed armed forces instructional programs in aviation and who have been awarded units by the Admissions Office for this service training may apply such credit as appropriate toward any of the major or minor programs offered by the department.

Honors Program

Students who have maintained a 3.5 grade point average in all aviation courses are eligible for the departmental honors program. Qualified candidates may apply or be nominated by the faculty, during their junior year. To meet the honors course requirements, candidates must enroll in at least one unit of Aviation 180H Individual Studies. Students who successfully complete the one-unit honors course, and who maintain the required 3.5 grade point average, will qualify for the award of departmental honors at graduation.

Department of Biomedical Engineering

Office: Engineering Building 233

Telephone: 408-924-3409

Email: biomedical-engineering@sjsu.edu

Website: sjsu.edu/bme

Associate Professors

Alessandro Bellofiore, Chair

Folarin Erogbogbo

Assistant Professors

Melinda Simon

Patrick Journey

Yun Wang

Abdulmelik Mohammed

Ella Sugerman

Overview

Biomedical engineering is an inherently interdisciplinary field that lies at the intersection of engineering and the biological and health sciences. Biomedical engineers use the principles of engineering to develop solutions for a wide variety of products and technologies that improve the quality of life. Students majoring in biomedical engineering will have the satisfaction of being actively engaged in a discipline that has human health and welfare as its primary focus.

The mission of the Biomedical Engineering Department is to be a recognized leader in translational biomedical research; to provide hands-on education focused on solving real world biomedical problems; and to foster innovation and entrepreneurship in the service of human well-being.

The BS and MS Biomedical Engineering programs have been designed, in consultation with potential employers, to prepare graduates for the wide variety of emerging careers in biomedical devices, bioelectronics and instrumentation, imaging, bioinformatics, and manufacturing, among others. The coursework prepares students to function effectively in a U.S. Food & Drug Administration-regulated environment. These programs also promote the development of soft skills, such as oral and written communication, and teamwork, that are necessary for professional success and lifelong learning in the global marketplace. The ability to address and deal with ethical issues, which are of paramount importance in biomedical engineering, is also cultivated, and communications skills are integrated into the classes throughout the curriculum.

In addition to BS and MS degrees in biomedical engineering, we offer an undergraduate minor in biomedical engineering, appropriate for students pursuing other fields of study but still interested in applications in biomedical engineering. The Biomedical Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Bioengineering and Biomedical and Similarly Named Engineering Programs Program Criteria.

Department of Chemical and Materials Engineering

Office: Engineering Building 385

Telephone: 408-924-4000; 408-924-4057 (Fax)

Email: chemical-materials-engineering@sjsu.edu

Website: www.sjsu.edu/cme

Professors

Wenchiang R. Chung
Katy Kao
Claire F. Komives
Melanie A. McNeil
Anand Ramasubramanian, Chair

Associate Professor

Ozgur Keles
Dahyun Oh
Liat Rosenfeld

Assistant Professors

Santosh KC
Gautam Kumar
Christopher Lew

Overview

Researchers, chemical and materials process engineers, pharmaceutical engineers, failure analysis engineers, and polymer engineers are some of the jobs that graduates from the Department of Chemical and Materials Engineering over the past 70 years obtain in Silicon Valley and beyond. Our graduates and alumni find employment in industrial sectors as diverse as oil and gas, alternative energy, carbon capture, semiconductors and microelectronics, additive manufacturing, nanotechnology, biotechnology, biomedical engineering, food process engineering, cosmetics engineering, and environmental remediation. Based on their interest, students can specialize in tracks by taking courses focused on these specializations. Our program is continually updated in consultation with industry advisors to

reflect the changing needs of the society. In addition to bachelor's and master's degrees in Chemical Engineering and Materials Engineering, we offer undergraduate minors in Materials Science and Engineering, and Sustainable Engineering. Many of our graduates pursue masters of science and doctoral degrees at various universities across the country.

The Chemical Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Chemical, Biochemical, Biomolecular and Similarly Named Engineering Programs Program Criteria. The Materials Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Materials (1), Metallurgical (2), Ceramics (3) and Similarly Named Engineering Programs Program Criteria.

Department of Civil and Environmental Engineering

Office: Engineering Building 145

Telephone: 408-924-3900 (Voice); 408-924-4004 (Fax)

Email: civil-engineering@sjsu.edu

Website: www.sjsu.edu/cee/

Professors

Akthem Al-Manaseer
Kurt McMullin
Udeme Ndon
Laura Sullivan-Green, Chair
Steven M. Vukazich

Associate Professors

Jae-Ho Pyeon

Assistant Professors

Indumathi Jeyachandran
Ali Mehran
Olivia Yip
Sravani Vadlamani

Overview

Civil engineers plan, design and supervise the construction of water supply systems, communications networks and transportation systems. They construct buildings and foundations. Using modern technology, they solve pollution and planning problems and tackle other engineering challenges. The Department of Civil and Environmental Engineering offers both bachelor's and master's degree programs. The undergraduate program includes course work in construction, environmental, geotechnical, structural, transportation and water resources engineering. Classroom instruction is supplemented by hands-on laboratory experiences, and the opportunity to participate in student clubs, including the American Society of Civil Engineers, Associated General Contractors, Institute of Transportation Engineers, Water Environmental Federation and American Water Works Association. To accommodate graduate students who also work, graduate courses are scheduled in the late afternoon and evening. The Civil Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Civil and Similarly Named Engineering Programs Program Criteria.

Department of Computer Engineering

Office: Engineering Building 284

Telephone: 408-924-4150 (Voice); 408-924-4153 (Fax)

Email: computer-engineering@sjsu.edu

Website: www.sjsu.edu/cmpe/

Professors

Magdalini Eirinaki
Rod Fatoohi, Chair
Mohamed Fayad
Jerry Z. Gao
Harry Li
Xiao Su
Weider Yu

Associate Professors

Kaikai Lui

Younghee Park

Wencen Wu

Assistant Professors

Bernardo Flores

Gheorghii Guzun
Jorjeta Jetcheva
Jun Liu
Ben Reed
Carlos Rojas
Gokay Saldamli
Mahima Agumbe Suresh

Stas Tiomkin
Haonan Wang

Overview

Located in the center of Silicon Valley, the Department of Computer Engineering provides local and national high-tech companies with high quality, practice-oriented computer graduates. Bachelor's degree programs are offered in computer engineering and software engineering. Master's degree programs are offered in computer engineering, software engineering, and artificial intelligence. Course topics range from computer hardware design and embedded systems to software design and construction of real-time systems, virtual systems, and enterprise software.

Curriculum integrates concepts and hands-on practice using the latest developments in emerging technologies, design, verification, implementation, and computer systems applications to provide students with advanced hardware and software skills. High-tech companies seek out our graduates. Our alumni work in hardware/software analysis, design and verification, hardware/software co-design, systems software, domain applications and product testing at many Silicon Valley firms from start-ups to Fortune 100 companies.

The Computer Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Engineering Programs Program Criteria. The Software Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Software and Similarly Named Engineering Programs Program Criteria.

Department of Electrical Engineering

Office: Engineering Building 349

Telephone: 408-924-3950

Email: electrical.engineering@sjsu.edu

Website: www.sjsu.edu/ee/

Professors

Chang Choo
Sotoudeh Hamedi-Hagh
Lili He, Graduate Advisor
Ping Hsu
Thuy Le, Chair
Essam Marouf
Nader Mir
Robert Morelos-Zaragoza, Undergraduate Advisor
David Parent, Undergraduate Major Advisor
Birsen Sirkeci, Graduate Coordinator

Associate Professors

Mohamed Badawy
Hiu Yung Wong, Graduate Advisor
Juzi Zhao

Assistant Professors

Shrikant Jadhav

Overview

The Electrical Engineering Department powers Silicon Valley. We provide more electrical engineering graduates to this region than are provided by any other college or university anywhere. At the forefront of technological research and innovation in multimedia computing, global communications, and high-speed integrated circuitry, electrical engineers push technology to the limits of physical and mathematical laws. There is no greater challenge for the creative mind. We prepare students for exciting careers in diverse areas of hi-tech engineering, including micro and nano technologies, chip-scale integration, embedded hardware and software systems, controls, robotics and autonomy, power electronics and energy systems, communication and machine learning, networking and

cybersecurity, quantum computing and quantum communication. Our accomplished faculty brings real-world experience to the classroom, and the department's links with local industry ensure that our laboratories are among the area's most advanced instructional facilities with up-to-date, state-of-the-art equipment. The Electrical Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Electrical, Computer, Communications, Telecommunication(s) and Similarly Named Engineering Programs Program Criteria.

Department of Industrial and Systems Engineering

Office: Engineering Building 485

Telephone: 408-924-3301 (Voice); 408-924-4040 (Fax)

Email: industrialsystems-dept@sjsu.edu

Website: www.sjsu.edu/ise

Professors

Yasser M. Dessouky, Chair (Industrial and Systems Engineering)

Anil Kumar, Human Factors/Ergonomics Director (Industrial and Systems Engineering; Human Factors/Ergonomics)

Niranjani Patel (Industrial and Systems Engineering)

H.S. Jacob Tsao (Industrial and Systems Engineering)

Associate Professors

Ayca Erdogan (Industrial and Systems Engineering)

Behin Elahi (Industrial and Systems Engineering)

Hongrui Liu, (Industrial and Systems Engineering)

Assistant Professors

Gaojian Huang (Industrial and Systems Engineering; Human Factors/Ergonomics)

Yue Luo (Industrial and Systems Engineering; Human Factors/Ergonomics)

Overview

Industrial and Systems Engineers figure out how to do things better by engineering processes and systems that improve quality and productivity. ISEs make significant contributions to their employers by saving money, increasing productivity, and making the workplace better for workers. Industrial and Systems Engineers focus on productivity improvement with respect for the human aspect of work. ISE bridges the gap between management and operations by applying six sigma principles, lean manufacturing processes, principles of organizational improvement, continuous improvement, and ergonomics. The undergraduate degree prepares engineers for challenges in manufacturing or service systems analysis and design. Students in our master's program build on an aptitude already in evidence for advanced professional work in industrial engineering. Our alumni are employed in a variety of industries, businesses and institutions, from retail establishments to manufacturing plants to government agencies to hospitals. The Industrial and Systems Engineering Bachelor of Science degree program is accredited by the Engineering

Accreditation Commission of ABET, under the General Program Criteria and the Industrial and Similarly Named Engineering Programs Program Criteria.

Department of Mechanical Engineering

Office: Engineering Building 310

Telephone: 408-924-3850

Email: mechanical-engineering@sjsu.edu

Email an undergraduate advisor: bsme-advising-group@sjsu.edu

Website: sjsu.edu/me

Professors

Raghu B. Agarwal, Graduate Program Coordinator
Fred Barez
Winncy Y. Du
Burford J. Furman
John Lee
Nicole Okamoto
Raymond K. Yee, Interim Chair

Associate Professors

Feruzza Amirkulova
Saeid Bashash
Farzan Kazemifar
Vimal Viswanathan

Assistant Professors

Amir Armani
Lin Jiang
Crystal Han
Mojtaba Sharifi
Ali Tohidi

Overview

Do you like to design and innovate? Are you good at math and science? Would you like to help solve problems facing our society? Consider a BS or MS in Mechanical Engineering. These programs are part of the Charles W. Davidson College of Engineering, which is ranked #3 in the nation among public universities that do not offer a doctorate (excluding military academies). We place hands-on labs and projects as a priority, and interaction with faculty is substantial. Mechanical engineering students focus on mechanical design, mechatronics, thermal-fluids engineering, or a combination of those areas. Our BS and MS graduates work in industries including product design, sustainable energy, transportation solutions, biomedical devices, aerospace systems, sensor technology, and semiconductor manufacturing. Please visit the Mechanical Engineering Department website at sjsu.edu/me for more information. The Mechanical Engineering Bachelor of Science degree program is accredited by the Engineering Accreditation Commission of ABET, under the General Program Criteria and the Mechanical and Similarly Named Engineering Programs Program Criteria.

Interdisciplinary Engineering Program

Office: Engineering Building 491

Telephone: 408-924-3968 (Voice); 408-924-3883 (Fax)

Email: Interdiscip.engineering@sjsu.edu

Website: www.sjsu.edu/ide

Director

Jack Warecki

Professors

Farshid Marbouti
Ahmed Hambaba
Belle Wei

Overview

In addition to the traditional engineering majors, the College of Engineering offers a degree in Interdisciplinary Engineering, BS (IDE) and an Engineering, MS. Both the BS and MS programs encompass interdisciplinary study. The IDE program also offers minors in Green Engineering, Applied Computing for Behavioral and Social Sciences, and Innovation and Law.

College of Health and Human Sciences

Formerly College of Applied Science and Arts

Office: MacQuarrie Hall 431

Telephone: (408) 924-2900

Email: health-human-sciences@sjsu.edu

Website: www.sjsu.edu/chhs

Leadership:

Audrey Shillington, Dean
Matthew Masucci, Associate Dean
Joseph (Joe) Grzywacz, Associate Dean of Research

Overview

The College of Health and Human Sciences provides both liberal and well-defined professional education at the undergraduate and graduate levels. Course work prepares students to be competent and transformative professionals in a technologically complex and culturally diverse society. The college's courses and programs provide students with a theoretical base that is developed and tested through: (1) research; (2) knowledge that can be applied in diverse systems; (3) processes that incorporate human understanding, social justice and cooperation, and (4) supervised practice through internships, field work and/or preceptorships in a variety of career-related settings. Graduates become leaders and establish professional careers as administrators, educators, practitioners, information specialists and applied researchers in a variety of settings. These settings include both private and public agencies, government institutions at all levels, community and health care organizations and educational institutions. The

College of Health and Human Sciences values and respects diversity, inclusion, civility and individual uniqueness; we recognize the strength these factors bring to our community and learning environment. All of our interactions should reflect trust, caring and mutual respect. We value education and intellectual curiosity above all. The academic freedom of faculty and students is vital to our role of promoting life-long learning through intellectual inquiry, scholarship and the pursuit of knowledge. An overarching goal is that faculty and our academic programs will be recognized for outstanding research, teaching and service across disciplinary and geographic boundaries. A list of programs and courses can be found on each department page in the catalog.

- Department of Aerospace Studies (Air Force ROTC)
- Department of Audiology
- Department of Kinesiology
- Department of Military Science (Army ROTC)
- Department of Nutrition, Food Science and Packaging
- Department of Occupational Therapy
- Department of Public Health and Recreation
- School of Social Work
- The Valley Foundation School of Nursing

College of Health and Human Sciences (CHHS) Student Success Center

Offices/Telephone: MacQuarrie Hall (MH) 533 / 408-924-2910; Health Building (HB) 105 / 408-924-8601

Email: CHHSsuccesscenter@sjsu.edu

Website: www.sjsu.edu/chhs-ssc

The College of Health and Human Sciences (CHHS) Student Success Center provides advising for undergraduate students majoring (or interested in majoring) in programs offered in CHHS Departments and Schools. Students are invited to stop by one of our two locations or call the Center for help with applying into a CHHS major, general education advising, academic policy related questions, peer mentoring, health professions advising, and/or to attend any of our various presentations and workshops.

The CHHS Student Success Center is also home to the Undeclared Pre-Nursing (UPN) Program, which is responsible for advising students in the UPN academic track. To find out more about the program and how to apply please visit us.

Internships

The departments/schools within the College offer internships that involve advanced practical experience, fieldwork or clinical experience in a professional work setting under direct supervision of qualified professionals. Interns would be assigned various duties and experiences related to their particular areas of specialization. Internships may include seminars, practica or preceptorships to further develop beginning and advanced level practice skills.

Teaching Credential Programs

The Department of Kinesiology, in collaboration with the Connie L. Lurie College of Education, provides two single subject professional programs designed for individuals who are interested in teaching physical education or adapted physical education in grades K-12. The California School Nurse Credential prepares Registered Nurses at the Master's and Post Master's level to provide and manage health services and programs in the school setting.

Organized Research Units and Unique Programs

The programs of the College of Health and Human Sciences are further enriched by educational, research, global partnerships, as well as cultural and training opportunities provided by the following specialized research units and unique programs: Institute of Nursing Research and Practice, Human Rights Institute, Timpany Center, The Center for Applied Research on Human Services (CARHS), and the Center for Healthy Aging in Multicultural Populations (CHAMP).

SPARTANS Occupational Career Life Studies Program

The Successful Postsecondary Access & Related Transition Activities for Neurodiverse Students Occupational Career Life Studies (SPARTANS OCLS) Program is designed for college-aged students with intellectual disabilities who did not meet the original admission requirements at SJSU. The program aims to provide inclusive academic, social, and work experiences to support students in their pursuit of independent employment based on person-centered career goals.

Each student's path in the SPARTANS OCLS program will be individualized according to their person-centered plans. The program is a two-year, non-degree, non-residential program offered through a collaboration between the College of Health and Human Sciences, the Lurie College of Education, and Professional & Global Engagement at SJSU. The 36-unit program consists of the following components:

1. **General Education (GE) Requirements:** A minimum of 12 credits, including 1 course from each of the four GE areas, selected through person-centered planning;
2. **Job Track Requirements:** A minimum of 12 credit hours, selected through person-centered planning; and
3. **Supervised Job Internship(s):** A minimum of 12 units, including 6 units of SPARTANS OCLS Internship Seminar and 6 units of SPARTANS OCLS Internship for on- and off-campus job placements/internships related to the chosen job track.

Note: This program currently is not eligible for Federal Financial Aid.

Department of Aerospace Studies (Air Force ROTC)

Office: Industrial Studies 214

Telephone: 408-924-2960

Website: www.sjsu.edu/afrotc

Email: afrotc@sjsu.edu

Professors

Lt. Col. Hayley Harstein, Chair

Assistant Professors

Capt. Benjamin Goirigolzarri

Capt. Austin Bullock

Overview

San José State University supports a wing of Air Force Reserve Officer Training Corps (AFROTC) with cadets from San José State University, Santa Clara University, Stanford University, UC Santa Cruz, and many local community

colleges. The Air Force ROTC program provides instruction in leadership, management, and national security studies along with military education and training. This program prepares the cadet for assignment to positions of responsibility and importance in the modern Air and Space Forces. Instruction is conducted on and off campus. This program offers all eligible SJSU students the opportunity to obtain an officer's commission in the United States Air Force or Space Force while earning their college degrees.

Program Overview

Our faculty brings a wealth of experience and diversity to the program. Instructors are active duty Air Force or Space Force officers from various career areas and provide students with a first rate academic education and military training experience. Each faculty member also acts as a student advisor to guide students through the program and help them reach the goal of an officer's commission in the United States Air and Space Forces.

College students wishing to commission as an Air or Space Force officer through ROTC may enroll in a three, three-and-a-half, or four-year program. Students attend Air Force ROTC classes along with other college courses and receive elective academic credit.

After successfully completing all requirements, the cadets are commissioned as Air or Space Force officers with a minimum four-year active duty service commitment.

Four-Year Program

The first two years of the Air Force ROTC four-year program, the General Military Course (GMC), consist of 1 hour of classroom work, two hours of leadership laboratory, and a minimum of two hours of physical conditioning each week. Upon completion of GMC requirements, cadets who wish to compete for entry into the last two years of the program, the Professional Officer Course (POC), must do so under the requirements of the POC selection system. This system uses qualitative factors, such as grade point average, unit commander's evaluation, aptitude test scores and physical fitness test scores to determine a student's officer potential. After selection, students must successfully complete a three-week summer field training program at Maxwell Air Force Base in Montgomery, AL before entering the POC.

In the POC, cadets attend class three hours a week, participate in a weekly leadership laboratory lasting two hours, and perform a minimum of two hours of physical conditioning per week. Cadets apply what they have learned in the GMC and at field training. POC cadets conduct the leadership laboratories and manage the unit's cadet corps. Each unit has a cadet corps based on the Air Force organizational pattern of flight, squadron, group, and wing. POC classes are small, with emphasis on group discussions and cadet presentations. Classroom topics include leadership, communication skills and national defense policy. Once enrolled in the POC, all cadets enlist in the Air Force Reserve and are assigned to the Obligated Reserve Section.

Scholarships

Current emphasis in the Air Force ROTC College Scholarship Program is to award scholarships to candidates pursuing undergraduate engineering or other scientific and technical disciplines. More than half of Air Force ROTC scholarships are awarded to students in these disciplines. Additionally, scholarships are available for foreign language majors; contact the Aerospace Studies department for more information regarding which foreign languages majors are eligible. Students in every degree program may enjoy scholarship opportunities, as the Air Force seeks to engage students who excel both academically and militarily.

Air Force ROTC offers several types of scholarships, awarded in increments of two, three, and four years. All types of awards provide an allowance for books, most required fees and a monthly nontaxable stipend. All junior and senior level cadets are on scholarship. All scholarship cadets are required to meet certain academic, military, and physical fitness standards to earn and maintain scholarship benefits.

Field Training

Field Training, in many cases, is a cadet's first exposure to a working Air Force environment and the Aerospace Expeditionary Force (AEF) concept. The program develops military leadership and discipline, and provides Air Force officer familiarization, orientation and motivation. At the same time, the Air Force can evaluate each cadet's potential as an officer and entry into the POC.

Field training provides Air Force leadership opportunities, professional development, marksmanship training, team building, physical fitness, and AEF orientation. Lodging, meals and transportation (from the cadet's home of record or school) are provided at no cost.

Medical Professions

Nursing majors may apply for an AFROTC scholarship and graduates agree to accept a commission in the Air Force Nurse Corps and serve four years on active duty after successfully completing their licensing examination. Cadet premedical scholarship recipients who are accepted to medical school within one year of graduating may be sponsored in their pursuit of medical degrees.

Legal Professions

Both first-year and second-year law students can apply for ROTC scholarships. Students complete either a one-year or a two-year ROTC program while attending law school.

Additionally, second-year law students can pursue an Air Force commission through Air Force ROTC's graduate law program. This program guarantees judge advocate duty after a student completes all Air Force ROTC, law school, and bar requirements. After graduating from an American Bar Association-accredited law school, the student must be admitted to practice law before the highest state court of any state or a federal court. The new lawyer is then commissioned into the Air Force in the grade determined by the laws and directives in effect at the time of call to active duty.

Aerospace Studies Minor

All undergraduate students are eligible for the minor in aerospace studies. Those wishing to pursue a career as an Air Force officer after graduation should contact the Department of Aerospace Studies.

Department of Audiology

Office: MacQuarrie Hall, #407

Telephone: 408-924-1754

Website: www.sjsu.edu/aud

Professors

Wendy Quach, Interim Chair

Assistant Professors

Anusha Yellamsetty

Overview

The mission of the Doctor of Audiology Program in the Department of Audiology is to provide students with an academic and clinical educational program that emphasizes a solid theoretical framework and facilitates learning outstanding clinical skills for providing high-quality services to individuals with hearing and balance disorders in our community. Graduates of our program will be ethical; culturally sensitive; committed to evidence-based practices; prepared to assume leadership roles; and experienced in, and appreciative of, an interprofessional team approach to patient care.

The Doctor of Audiology (AuD) program at San José State University is accredited for the period of February 6, 2024 to February 28, 2034 by the Accreditation Commission for Audiology Education (ACAE), Office of the American Academy of Audiology, 11480 Commerce Park Drive, Suite 220, Reston, VA 20191 (703) 226-1056).

The doctoral program in audiology (AuD) at San José State University is a Candidate for Accreditation by the Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association. This is a "pre-accreditation" status with the CAA awarded to developing or emerging programs for a maximum period of five years. The full address and telephone number for CAA is Council on Academic Accreditation in Audiology and Speech-Language Pathology, American Speech-Language-Hearing Association, 2200 Research Boulevard, #310, Rockville, MD 20850, 800-498-2071.

Department of Kinesiology

Office: Spartan Complex, SPX 102

Telephone: 408-924-3010

Email: kinesiology@sjsu.edu

Website: www.sjsu.edu/kinesiology

Professors

Theodore Butryn
Craig J. Cisar
Jessica Chin
Matthew A. Masucci
Peggy Plato, General Education Program Coordinator
Tamar Z. Semerjian, Chair
Emily H. Wughalter

Associate Professors

Cole Armstrong, Graduate Coordinator
Stanley B. Butler
Seung Ho Chang, Physical Activity Program Coordinator
David Daum
Areum Jensen
Jihyun Lee

Assistant Professors

Matthew Bejar
Michael Dao, Associate Chair
Yang Hu

Li Jin
Erin Siebert, Undergraduate Coordinator
Lamont Williams

Overview

Kinesiology majors study human movement, the physical activity involved in work and play. Many of our graduates work as athletic directors, athletic trainers, coaches, teachers, personal trainers and sports managers; others continue on to medical school or receive advanced degrees in physical therapy. A charter member of the American Kinesiology Association, our department is a recognized leader in the CSU system as well as in kinesiology education and other allied health professions throughout the country. We offer bachelor's degrees in kinesiology and teaching, and a master's degree in kinesiology that allows degree candidates to focus on exercise physiology, sport management, sport studies, and other areas of specialization. We support several student organizations, including the Adapted Physical Activity Club, a student service organization that advocates for individuals with disabilities; the Pre-PT Club; the pre-OT Club; and the Kinesiology Ambassadors' Club, which seeks to spread information about the field of kinesiology.

Department of Nutrition, Food Science and Packaging

Office: Central Class Building 200
Telephone: 408-924-3100
Email: nufs-info-group@sjsu.edu
Website: www.sjsu.edu/nufspkg

Professors

Kasuen Mauldin
Ashwini R. Wagle, Chair

Associate Professors

Xi Feng
John Gieng
Giselle Pignotti
Adrienne Widaman

Assistant Professors

Jacqueline Bergman
Susan Chen
Edmund Tang
Mi Zhou

Overview

Nutritionists, food scientists, dietitians, foodservice and packaging professionals. The Department of Nutrition, Food Science and Packaging trains graduates for rewarding careers in settings as diverse as community organizations, educational institutions, hospitals, nutrition and research laboratories, corporations and government agencies. The first nutrition department in the CSU system, our department traces its roots to 1911. We currently offer a master's degree in nutritional science, and two undergraduate degrees in the field: a BS degree in nutritional science with three concentrations: dietetics; applied nutrition and food sciences; and food management, and a BS degree in packaging. Students can complete a combined BS + MS through the SAGE Scholars program in all three concentrations in the nutritional science and packaging programs. Our dietetics program is accredited by the Academy of Nutrition and Dietetics (AND) and the Accreditation Council for Education in Nutrition and Dietetics

(ACEND) qualifying our students to apply for ACEND accredited internships and to work toward becoming registered dietitians.

Hear more about the department and its programs from faculty, students and employers in these videos:

- Overview of the Department
- Overview of the Nutritional Science Programs
- Overview of the Packaging Program
- Student Scholarships

Department of Occupational Therapy

Office: Central Classroom Building 203

Telephone: 408-924-3070

Email: occupationaltherapyadmin@sjsu.edu

Website: www.sjsu.edu/occupationaltherapy

Professors

Lynne Andonian

Jerilyn "Gigi" Smith, Chair

Megan Chang

Associate Professors

Deborah Bolding

Assistant Professors

Luis Arabit

Chiao-Ju Fang

Melisa Kaye

Katrina Long

Graham Teaford

Overview

The SJSU Department of Occupational Therapy offers the oldest accredited OT program in the CSU system. Founded in 1943, the Master of Science in Occupational Therapy (MSOT) degree program is designed for those who have already earned a baccalaureate degree in another field. The program of study enables students to obtain the education and degree necessary to be eligible to practice as an occupational therapist. Once the MS degree in Occupational Therapy is complete, including the successful completion of the OCH 201A and OCH 201B courses, the student is eligible to sit for the national certification examination. Successful completion of the examination qualifies the candidate to apply for national certification and state licensure.

The MSOT program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 6116 Executive Blvd., Suite 200, North Bethesda, MD 20852-4929. ACOTE's telephone number. The National Board for Certification in Occupational Therapy (NBCOT) School Program Performance Data is also available.

In addition to the MSOT, SJSU now offers an entry-level Occupational Therapy Doctorate (OTD) program. The OTD program is designed to develop occupational therapy leaders, advocates, and innovators with a clear focus on community engagement and social justice for underserved populations. Once the OTD program is completed, including the successful completion of the OCH 201AD and OCH 201BD courses and the Capstone project, the student is eligible to sit for the national certification exam. The OTD program has full WSCUC approval and is awaiting ACOTE approval (Accreditation Council for Occupational Therapy Education (ACOTE) of the American

Occupational Therapy Association (AOTA), located at 6116 Executive Blvd., Suite 200, North Bethesda, MD 20852-4929. ACOTE's telephone number is 301-652-6611.

Courses are taught by nationally recognized faculty who have clinical, research and teaching expertise across a broad range of traditional and emerging practice areas. The Student Occupational Therapy Association (SOTA) provides a myriad of social, educational and leadership opportunities. Always in high demand, our graduates are hired by private and public health care institutions and agencies.

Department of Public Health and Recreation

Formerly Health Science and Recreation

Office: Spartan Complex, 201

Telephone: 408-924-2971

Email: healthscience-group@sjsu.edu

Website: www.sjsu.edu/phr/

Professors

Miranda Worthen (Public Health)

Associate Professors

Monica Allen, Chair (Public Health)

Josh Baur, Recreation Program Coordinator (Recreation)

Marcelle Dougan (Public Health)

Susan Ross (Recreation)

Ni Zhang (Public Health)

Assistant Professors

Rachel Berkowitz (Public Health)

Anji Buckner-Capone, Undergraduate Program Coordinator (Public Health)

Andrew Carter (Public Health)

Vicky Gomez (Public Health)

Chulwoo (Charles) Park (Public Health)

Overview

The Department of Public Health and Recreation prepares leaders and practitioners who promote health and improve the environments in which we live, work, learn, and play. We strive to embrace a Teacher-Scholar-Practitioner Model through student, alumni, faculty, and community engagement to advance practices in public health and recreation fields. Our undergraduate curriculum in public health examines the multiple dimensions and determinants of health (physical, emotional, social, environmental, and spiritual) and the scientific and practical basis for understanding and promoting health at the population level (including epidemiology, policies, and community health) to create the optimal, meaningful conditions for health and wellness for all.

Our recreation degree program, founded in 1947 (the oldest undergraduate recreation degree program in the State of California), has a core curriculum continuously accredited by the Council on Accreditation of Park, Recreation, and Tourism Related Professions (COAPRT) since 1987. We offer concentrations in Recreation Management and Recreation Therapy, as well as a minor in recreation and a minor in recreation and nature.

Founded in 1970, the Master of Public Health (MPH) program has been accredited by the Council on Education for Public Health (CEPH) since 1974 and is offered in two formats. Our campus format is a regular session and offers the flexibility to complete the program full or part-time. Our synchronous online format is offered through the Professional and Continuing Education as a cohort model completed in two years. Our MPH students engage in an integrated program of learning, scholarship, and internships in partnership with a diverse network of community agencies.

The undergraduate public health program prepares students for entry level careers in public health and allied health services in addition to serving as a solid foundation for graduate studies in a variety of disciplines. The mission of the BS in Public Health is to foster an environment that embraces diversity and inspires active, critical, interdisciplinary teaching and learning to improve population health.

The Public Health and Recreation undergraduate and graduate programs incorporate student-centered curricula with our commitment to community development, social justice, interdisciplinary and intercultural approaches. We emphasize rigor and innovation, high-impact experiential learning, and career-focused application.

Department of Military Science (Army ROTC)

Office: Department of Military Science; Varsi Hall, Room 232, Santa Clara University; 500 El Camino Real, Santa Clara, CA 95053

Telephone: 408-554-4781

Website: www.sjsu.edu/armyrotc

Professors

Lieutenant Colonel, Sean C. Chang
Captain Travis Newman
Captain Chris Strain
Master Sergeant Geoffery Landon
Sergeant First Class Cristhian Sanchez

Enrollment Officer

Mario Morales
Telephone: 408-554-6840

Overview

Military Science offers an interdepartmental minor which consists of courses taught by active duty Army personnel. The purpose of the minor is to acquaint the university student with the fundamental principles of national security and military history, to introduce the techniques and principles of modern warfare, and to develop character and leadership skills. All undergraduate students are eligible for a minor in Military Science. Those wishing a career as an Army Officer after graduation should contact the Department of Military Science.

Basic Course

Fundamentals of Leadership and Management. The term Basic Course refers to first and second year courses (MILS 1A-MILS 1B, and MILS 2A, MILS 2B, MILS 2C), which are designed for beginning students who want to qualify for entry into the Advanced Course and for those students who may want to try Military Science without obligations. A number of popular or challenging extracurricular activities are associated with these courses. A student can also

qualify for entry into the Advanced Course by completing only the summer encampment, Leader's Training Course (LTC) (MILS 2C). Outstanding students in this course may receive a two-year scholarship.

Advanced Course

Advanced Leadership and Management. The Advanced Course consists of the courses MILS 2A, MILS 2B, MILS 2C, and MILS 140A-MILS 140B. It is open to students who have completed the Basic Course or earned placement credit for it (various methods). The Advanced Course qualifies a student for a commission as an officer in the United States Army. Students must complete MILS 130C, a five week leadership evaluation camp during the summer, in sequence unless otherwise approved by the Professor of Military Science. Students receive a monthly stipend during the school year. Students who do not desire to compete for a commission as an officer in the Army may take these courses for academic credit with approval by the Professor of Military Science.

Labs and Field Exercises

During each semester of class work, weekly leadership lab participation is required. Two off-campus exercises involving adventure training, rappelling, rifle marksmanship, leadership training and survival skills are optional for non-scholarship basic course students. Two off-campus exercises for Advanced course students are mandatory with the focus on leadership and military skills.

School of Social Work

Office: Washington Square Hall 215

Telephone: 408-924-5800

Email: socialwork@sjsu.edu

Website: www.sjsu.edu/socialwork

Professors

Edward Cohen
Amy D'Andrade
Sadhna Diwan
Laurie Drabble
Meekyung Han
Peter Allen Lee, Director
Sang Lee
Migdalia Reyes
Soma Sen

Associate Professors

Yolanda Anyon
Emily J. Bruce
Nicole Dubus
Kathy Lemon
Jennifer Wolf

Assistant Professors

Moctezuma Garcia
Na Youn Lee

Overview

Social work is a dynamic and challenging profession that presents exceptional opportunities for personal job satisfaction. A professional social worker helps people cope with interpersonal and social problems and obtain the resources they need to live with dignity. Additionally, social workers help communities mobilize and deliver the services and support they require. The School of Social Work is committed to the core values of service, social justice, the dignity and worth of individuals, human rights, competence, integrity and scientific inquiry. We honor diversity. Employing a transcultural perspective, we train our students to practice professionally with a broad range of ethnic and cultural groups, the disenfranchised, and the marginalized. Our undergraduate and graduate degree programs are accredited by the Council on Social Work Education. Our On-Campus MSW Program may be completed in two or three years; our Online/Hybrid MSW Program is completed in two years through continuous year-round enrollment. Our Advanced Standing option provides qualified students from an accredited Social Work Program degree to complete the MSW degree in one summer and one year, offered in both on-campus and online formats.

The Valley Foundation School of Nursing

Office: Health Building 420
Telephone: 408-924-3131
Email: nursing@sjsu.edu
Website: www.sjsu.edu/nursing

Professors

Nancy Dudley
Ruth Rosenblum
Wei-Chen Tung
Vivian Wong

Associate Professors

Lisa Rauch, Director
Robin Whitney

Assistant Professors

Alice Butzlaff
Denise Dawkins
Dorothy Moore
Laura Senn
April Wood
Nicole Zhang

Overview

The Valley Foundation School of Nursing offers an innovative curriculum and varied experiential opportunities for students. The baccalaureate, master's, and doctoral degree programs in The Valley Foundation School of Nursing at San Jose State University are accredited by the California Board of Registered Nursing and the Commission on Collegiate Nursing Education. These programs prepare nursing professionals to be socially and ethically responsible clinicians and scholars who are able to meet the changing healthcare needs of a diverse global community. Under faculty supervision, baccalaureate nursing students participate in clinical experiences in both hospital and community

agencies. In addition, a student who is already a Registered Nurse or in the Concurrent Enrollment Program can earn a baccalaureate degree. Nurses returning for their master's degree will gain additional knowledge and skills needed for either advanced practice concentration in the Family Nurse Practitioner role or as a Nurse Educator. San Jose State University offers a post-master's Doctor of Nursing Practice (DNP) Program that prepares professional nurses to assume leadership positions in clinical practice.

Undergraduate BSN Application and Admission Procedures

College of Humanities and the Arts

Office: Washington Square Hall 120

Telephone: (408) 924-4300

Email: humanities-arts@sjsu.edu

Website: www.sjsu.edu/humanitiesandarts

Leadership:

Mary Elizabeth Anderson, Associate Dean of Faculty Success and Research

Shannon Miller, Dean

Roula Svorou, Associate Dean of Student Success and Academic Programs

Overview

The College of Humanities and the Arts seeks to instill in students an understanding of human existence that is tolerant, moral and appreciative of human creativity as manifested in works of language and literature, the visual and performing arts, philosophy and theology, and by engagement in the creation of art and criticism.

Through its programs, the College aims to develop engaged participants in the local communities as well as in the global dimension of cultural, intellectual, and economic life. College faculty educate students for lifelong learning as well as for their first job after graduation. Building upon a foundation of excellent oral and written communication, the College helps students pursue a wide variety of paths to knowledge and careers, through specialized study in many fields, including art history, animation, advertising, comparative literature, dance, film, foreign languages, journalism, musical composition and performance, painting, public relations, radio broadcasting, sculpture, television, linguistics, comparative religion, philosophy, theater, and technical and creative writing.

Faculty in all disciplines of the College engage in research published by major scholarly journals and university presses, supported by the major national grants and foundations, and presented at the major scholarly conferences. Artists within the College publish in important literary journals, exhibit at nationally recognized venues, or participate in prestigious performing arts productions. Throughout the College, faculty seek to produce scholarship or creative works that achieve national recognition.

College curricula develop the individual's power to communicate effectively and to analyze critically the conditions upon which cultural perceptions are built. Courses in the College attempt to reveal the evolving aspiration toward aesthetic and intellectual power in human cultures by exposing the student to important ideas, achievements, and experiences in the humanities and the creative arts. In its many professional arts programs, the College develops the talent of those who have the skill to perform or create works of art, fixing in vivid form the values of diverse heritages. In its programs in language, literature, philosophy, and other areas of the humanities, the College engages students in the discovery and exploration of works from around the world that deepen understanding of how human imagination and intellect function within different historical and cultural contexts. A primary purpose of a humanities education is to develop the skills and confidence that support a creative, analytical mind capable of lifelong learning and adaptation to different contexts and opportunities. Students in design, animation, journalism, and advertising frequently win awards at state and national competitions.

Through its General Education, Arts, and many scholarly programs and research units, such as the Martha Heasley Cox Center for Steinbeck Studies, the Ira F. Brilliant Center for Beethoven Studies, the Center for Literary Arts, the Center on Ethics, and the Center for Comparative Philosophy, the College of Humanities and the Arts makes an indispensable contribution to the SJSU community and the region surrounding it. A list of programs and courses can be found on each department page in the catalog.

- Department of Art and Art History
- Department of Design
- Department of English and Comparative Literature
- Department of Film and Theatre
- Department of Humanities
- Department of Linguistics and Language Development
- Department of Philosophy
- Department of World Languages and Literatures
- School of Journalism and Mass Communications
- School of Music

Humanities and the Arts Student Success Center (HASSC)

Office: Washington Square Hall 120

Telephone: 408-924-5095

Email: ha-successcenter@sjsu.edu

Website: <https://www.sjsu.edu/ha-advising/>

The Humanities and the Arts Student Success Center provides general education advising, academic planning and serves as a resource to other programs at SJSU. We serve undergraduate students who are pursuing major(s) within the College of Humanities and the Arts. We offer both drop-in advising and appointments. All students within the college are encouraged to meet with an academic advisor to discuss a plan that will ensure timely graduation.

Internships

Internships provide students with the opportunity to incorporate work experience in a professional setting as part of their academic programs. Internship representatives are available within each department.

Special Centers

The College of Humanities and the Arts is home to the Martha Heasley Cox Center for Steinbeck Studies, the Ira F. Brilliant Center for Beethoven Studies, the Center for Literary Arts, the Center on Ethics, and the Center for Comparative Philosophy. The College manages the San José State University Writing Center, a resource for all SJSU students to help them become better writers. The College also manages the Hammer Theatre, a city-owned venue that offers a professional venue for our best students in theater, music, and dance.

Teaching Credential Preparation Programs

Teaching credential preparation programs are offered by the School of Music, the Department of Art and Art History, the Department of English and Comparative Literature, and the Department of Humanities (Liberal Studies).

Department of Art and Art History

Office: Art Building 116

Telephone: 408-924-4320

Email: art@sjsu.edu

Website: www.sjsu.edu/art

Art History and Visual Culture

Associate Professors

Anthony Raynsford

Assistant Professors

Sarah Mills

Fine Art Studio Program

Professors

G. Craig Hobbs

Robin J. Lasser

Shannon G. Wright

Associate Professors

Andrew Blanton

Binh T. Danh

Rajorshi Ghosh

Rhonda M. Holberton, Interim Chair

Valerie Mendoza

Adam C. Shiverdecker

Assistant Professors

Shaun P. O'Dell

Sarah Mills

Carla Fischer Schwartz

Overview

Visual art and art history play a central role in our increasingly visual and interactive culture. Without the barriers of language, the visual arts are able to foster the kind of cross-cultural understanding required of global citizens. Founded in 1913, the Department of Art and Art History is committed to researching, teaching and practicing conceptual creativity and creative problem solving in media which encompass equally the most contemporary technologies and the most ancient forms of artistic practice. We are dedicated to the understanding and analysis of visual communication, to complex critical thinking and writing, and to the interpretation of local and global culture, past and present. Our BA, BFA, MA, and MFA degrees, accredited by the National Association of Schools of Art and Design (NASAD), offer students the opportunity to study with award-winning faculty in a "best-in-the-West" combination of facilities for making, exhibiting, and researching art across many media. All programs are supported and enriched by a diverse schedule of exhibitions in the Natalie and James Thompson Gallery, eight student galleries, and weekly public lectures.

Department of Design

Office: Art & Design Building 120

Telephone: 408-924-4343

Email: design@sjsu.edu

Website: www.sjsu.edu/design

Professors

David Chai, Animation & Illustration Program Coordinator

Raquel Coelho, Master of Design Animation Program Coordinator

Connie Hwang, Graphic Design Program Coordinator

Chang Sik Kim

Virginia SanFratello, Department Chair

Diana Seah, Interior Design Program Coordinator

Associate Professors

John Clapp

Yoon Chung Han

Joshua Nelson, Master of Design XD Program Coordinator

Assistant Professors

Marjan Khatibi

Kevin Mannens

Eleanor Pries

Dana Ragouzeos

Kohar Scott, Industrial Design Program Coordinator

Angela Wu

Overview

The Department of Design at San José State University is one of the top design programs in California and the best value in design education. Our mission is to shape the next generation of social, political, and environmental innovators by taking full advantage of our proximity to Silicon Valley, the global center of high technology, innovation, venture capital, and social media. We are a community of creative technologists, who are teaching and learning technological and fabrication skills that are inclusive and adaptive, poetic, cutting edge, and experimental. We understand that design is everywhere and is transformative throughout the world. We use our skills and knowledge to make our world safer, healthier, more equitable, and to create positive change.

The Department offers a wide range of majors and minors in Animation & Illustration, Graphic Design, Industrial Design, Interaction Design, and Interior Design. All of our programs are focused on giving students real-life, practical, design experiences that will help them find their place in the broader design community and in turn, the world. Through internships, funded research, and community engagement projects, we are able to prepare students to launch their careers with a wide range of abilities, including digital design skills such as 3D-printing and augmented and virtual reality knowledge. Because our students are engaged in co-curricular activities beyond the classroom, they learn strategy, leadership, communication, and how social and emotional intelligence can impact design outcomes.

The department is accredited by the National Association of Schools of Art and Design (NASAD).

Professional Design Programs

The Department of Design offers professional programs in Animation & Illustration, Graphic, Industrial, and Interior Design. The curricula of the four programs combine the aesthetic sensitivity and technical knowledge necessary to function creatively in design, business and industry. Internships in design offices are integral to all four programs.

Admission Requirements for Animation & Illustration, Graphic, Industrial, and Interior Design

1. Meet University admission requirements; attain upper division standing by completing 60 transferable semester units or 90 transferable quarter units prior to enrollment.
2. Admission to the BFA in Animation and Illustration is determined at the time students apply for admission to the University. There is no internal change of major into this program. Students admitted to the BA Design Studies may be admitted to the BFA in Graphic or Interior Design or the BS in Industrial Design on a space available basis after successfully completing required portfolio reviews in their first two years of study.

Portfolio reviews are typically held each semester for the following semester. Instructions for applying for the BFA or BS are available from each program coordinator. The following courses are required as preparation for the portfolio review:

- Animation & Illustration: ANI 10, ANI 11, ANI 13, ANI 21, ANI 31, ANI 71, ANI 15, ANI 111, ANI 121.
- Graphic Design: ANI 11, DSGD 63, DSGD 83, DSGD 99, DSGD 100, DSGD 104, DSGD 109.
- Industrial Design: DSID 21, DSID 22, DSID 31, DSID 32, DSID 32A.
- Interior Design: DSIT 5, DSIT 10, DSIT 29, DSIT 83, DSIT 33, DSIT 34. Portfolio Review occurs after concurrent courses DSIT 33 and 34.

Department of English and Comparative Literature

Office: Faculty Offices 102

Telephone: 408-924-4425

Email: english@sjsu.edu

Website: www.sjsu.edu/english

Professors

Angela Noelle Brada-Williams, Chair
Adrienne Eastwood
Katherine Harris
Revathi Krishnaswamy
Richard McNabb
Kathleen McSharry
Linda Mitchell
Thomas Moriarty
Alan Soldofsky
Nancy P. Stork
Nicholas Taylor
Mary Warner

Associate Professors

Selena Anderson
Allison Johnson
Keenan Norris
Mark Thompson
Ryan Skinnell

Assistant Professors

Meghan Gorman-DaRif
Scott Jarvie
J. Michael Martinez
Brook McClurg
Maite Urcaregui

Overview

Study with award-winning teachers and professional writers. Develop editing and production skills by working on Reed Magazine, one of the oldest literary journals in the West. Prepare for a variety of careers in teaching, career and technical writing, or advanced study in English, law and medicine. The Department of English and Comparative Literature offers programs in English, American, world, and comparative literature, and creative and professional writing. Our MA prepares students for teaching careers or doctoral studies. Our MFA in creative writing trains professional writers in the history and craft of poetry, creative nonfiction, fiction, script- and screen-writing. Home to the Steinbeck Fellows and the Lurie Visiting Distinguished Author programs, the department also houses the Center for Literary Arts, which brings distinguished poets, fiction writers and creative nonfiction writers to campus to give public readings.

Undergraduate Honors Program

Upper-division students with a minimum grade point average of 3.0 overall and 3.5 in the major are eligible for Departmental Honors. Honors students must complete a graduate course in English or ENGL 190 - Honors Colloquium. Application to the honors program should be made through the English Department Office (English@sjsu.edu).

Department of Film and Theatre

Office: Hugh Gillis Hall 100

Telephone: 408-924-4530

Email: filmandtheatre@sjsu.edu

Website: www.sjsu.edu/filmandtheatre

Professors

Amy Glazer
Kimb Massey
Alison McKee

Babak Sarrafan
Matthew Spangler, Chair

Scott Sublett

Associate Professors

Andrea Bechert
Sukanya Chakrabarti
Harold Mathias

Assistant Professors

Hojeong Lee
Chafin Seymour
Raha Shojaei

Overview

The Department of Film and Theatre prepares students for successful careers and leadership roles in performance and media. We develop media artists, directors, screenwriters, actors, designers, cinematographers, producers, technicians, educators, and scholars of the highest possible caliber. The entertainment industry is one of the largest contributors to the national economy, and media creators and performers are some of the strongest influencers in our society. To produce and distribute media that influence cultural dialogue requires a rigorous liberal arts education. All aspects of Film and Theatre are under the guidance of award-winning filmmakers and theatre professionals, many of whom work in the industry. As a center for the training of future artists, the Department of Film and Theatre is committed to introducing a diversity of fine arts and cultures to students. The Department provides students with the foundation to enter the entertainment industry, giving them excellent preparation to attend graduate school or enter the profession directly after graduating with their program degree.

Renowned for its rigor and depth, the Dance program offers students an exciting world that is at once physical, artistic, and intellectual, with the intensity of a conservatory and the warmth and care of a large family. At the end of their studies, students are ready for the field as performers, choreographers, teachers, technicians, fitness instructors, and more. Throughout the program, dancers at every level train weekly in a number of different dance genres. This not only enlarges a dancer's vocabulary but also offers distinct methods of conceiving movement, shaping the body, and communicating through one's physical instrument. All dancers learn to be choreographers in choreographic workshops, where they are challenged to develop their creative acumen and to begin to experience themselves as unique artists with their own movement signature.

Performance, where technique and creation come together, is the heartbeat of Dance at SJSU in many ways. With a committed faculty of esteemed professional artists active in the field, performance threads itself throughout the curriculum. Whether it is one's first year or senior year, dancers have the chance to rehearse and showcase their own and others' work before supportive audiences. For those pursuing a BFA, the University Dance Theater (UDT) is a key component; while BA students are welcome to audition, UDT participation is optional. Renowned guests are a vital part of SJSU's training, too. Each year, established or up-and-coming artists join the department as artists-in-residence, rubbing shoulders with students, opening eyes to new ways of dancing or thinking of dance, and even including them in staged work. Recent artists include Kyle Abraham, Doug Varone, Camille Brown, Gallim Dance, and Mike Esperanza. Amid such abundance, the curriculum is anchored by courses in history, culture, science, technical training and self-care.

The BA in Radio-Television-Film focuses on the development of creative voice and artistic expression in the context of a rigorous liberal arts education. This comprehensive program emphasizes a hands-on, project-based approach in which students will learn all the aspects of radio, audio, television and film production through the use of our state-of-the-art facilities and best industry practices. Students will receive a solid foundation in the areas of Television/Film Production including sound-for film, Screenwriting, Radio-Television-Film Studies and Radio Production. Our Radio-Television-Film Studies program offers a comprehensive study of media from historical, cultural, and critical perspectives. While earning a BA in Radio-Television-Film, students gain industry experience working with Spartan Studios (our in-house film studio), developing their directing skills for television and film, interning for local film festivals, or working on numerous media projects from the Bay Area to Los Angeles, across the country, and internationally. Students can also gain hands-on experience working with KSJS 90.5-FM, SJSU's student-run, award-winning radio station that has been on-air, 24/7 365 days a year for over 60 years. Finally, the RTVF program is proud to have an active student networking club, the Film Production Society, where students can develop and produce independent RTVF projects.

The BA in Theatre gives students an opportunity to participate in a strong professional theatre curriculum with high-quality productions that serve as a learning laboratory in which students collaborate with faculty and guest

professionals; through studio workshops and advanced productions at San Jose State University's newly acquired Hammer Theatre. The Theatre Program offers three areas of study with the specific goals of serving each student: acting and directing for film, television and theatre; musical theatre; and design and technology. While earning their BA in theatre, students gain real-world experience from working onstage and backstage with professional organizations such as the California Shakespeare Theatre, Magic Theatre, San Francisco Playhouse, TheatreWorks, and the Berkeley Repertory Theatre.

Department of Humanities

Office: Clark Hall 419

Telephone: 408-924-4463

Email: humanities@sjsu.edu

Website: www.sjsu.edu/hum

Professors

J. Todd Ormsbee, Chair

Shannon Rose Riley

Susan Verducci-Sandford

Associate Professors

Funie Hsu

Kim Brillante Knight

Cynthia Rostankowski

Assistant Professors

Erica Eva Colmenares

Eleni Duret

Daniel Lanza Rivers

Arthur Zárate

Welcome to the Humanities Department

The Home of Creative and Transdisciplinary Studies!

The mission of the Humanities Department is to cultivate global citizens who are sensitive to difference, complication, change, conflict, and injustice. Students in the department learn to practice and integrate multiple approaches to creating and critiquing knowledge as they seek to understand what people value and why. They continue to shape their own intentional engagement with the world, and are prepared to work across many professional fields.

The Humanities Department at SJSU is a prominent center for innovative and interdisciplinary study and research. We offer three different BA Programs for our students: the Liberal Studies Teacher Preparation BA; the Creative Arts BA; and the Humanities BA, in which students pursue a concentration in American Studies, Liberal Arts, or Comparative Religious Studies.

The Liberal Studies Teacher Prep BA offers several pathways toward becoming a teacher in the State of California. In the last few years, we have opened up new pathways that allow eligible students to complete the credential in ways that reduce barriers to becoming a teacher. The SJSU Liberal Studies program offers a traditional BA pathway, a BA with an Integrated Teacher Education Program (ITEP) focus, and four Spartan Accelerated Graduate Education (SAGE) pathways. SAGE pathways combine a Liberal Studies BA with a credential (Multiple Subject or Education Specialist) and a Master's Degree (MAT). The ITEP and SAGE pathways reduce the number of units to earn these degrees, and provide students with a seamless road to a graduate career. All Liberal Studies programs with a credential include an option to earn a Critical Spanish Bilingual Authorization.

The Creative Arts BA is a cutting-edge program in the interdisciplinary arts in which students pay close attention to the creative process and the use of the arts for social justice. (Consider the role of murals in the #BLM Movement, for example.)

Our Humanities majors embrace a global view of human meaning-making and relationships across cultures, geographies, ecosystems, and species. Our inquiry extends across issues of human and non-human species rights, social justice, global migration, technology, the arts, culture, society, education, and communication. We are currently expanding our view to include the Digital Humanities, Environmental Humanities, Global Humanities, and Human-Animal curricula to provide students with additional toolkits needed to address some of the most important questions of our time.

Our faculty are teacher-scholars who are experts at the use of high-impact practices and who are able to inspire our students. To continually enrich our work with students, as a faculty, we are committed to serious scholarship and creative work, as well as to forms of public scholarship and the scholarship of engagement, which often reach a wider audience.

The Humanities Department is also home to many minor programs in Humanities, American Studies, Religious Studies, and Creative Arts. And we are home to the Humanities Honors program for lower division students.

Advisors

Creative Arts, majors and minors

- Shannon Rose Riley

Humanities, all majors and minors

- J. Todd Ormsbee
- Funie Hsu
- Kim B. Knight

Liberal Studies Teacher Preparation, all majors

- Erica Colmenares, Liberal Studies
- Eleni Duret, Liberal Studies
- Rebecca Kling, Liberal Studies (Fall Semesters)
- Susan Verducci, Liberal Studies (Spring Semesters)

General Education Curriculum

Humanities Honors

The Humanities Honors program is open to all students looking for a challenging yet rewarding and supportive experience. Courses in the Humanities Honors program introduce students to major events, sites, texts, and artworks of world history with an emphasis on points of contact between global cultures including cultural exchange, borrowing, inheritance, and appropriation. The Honors curriculum prioritizes learning community, cohort experiences, and discovering connections between material taught in different courses. Honors courses are team-taught by faculty with expertise in different disciplines. Each course explores its topic through 3 to 4 cultural units that examine cultural connections along three axes: East-West; Global North-Global South; and past-present. Students in the program complete 12 units of GE requirements: oral communication (A1), arts (C1), critical thinking and writing (A3), and humanities (C2). In addition, the Humanities Honors program offers a two-course upper-division sequence of Advanced Honors (HUM 177A/HUM 177B), which meets the earth, environment, and sustainability (R); self, society, and equality in the U.S. (S);, and culture and global understanding (V) SJSU Studies requirements.

Department of Linguistics and Language Development

Office: Clark Hall 473

Telephone: 408-924-4413

Email: linguistics@sjsu.edu

Website: www.sjsu.edu/linguistics

Professors

Stefan Frazier, Chair

Swathi Vanniarajan

Associate Professors

Hahn Koo

Scott Phillabaum

Assistant Professors

David Malinowski

Yining Nie

Jon Rawski

Julia Swan

Overview

Linguistics, the scientific study of human language, explores what language is, how it works and which features human languages have in common. Our curriculum focuses on understanding how the languages of the world work and on addressing the English language needs of our culturally diverse society. Students in the Department of Linguistics and Language Development (LLD) are part of an ethnically and linguistically diverse student body, taught by nationally and internationally recognized faculty. We offer graduate and undergraduate degrees in linguistics, a certificate in computational linguistics, a master's degree in TESOL (Teaching English to Speakers of Other Languages), and undergraduate and graduate certificates in TESOL. Our research infrastructure includes a state-of-the-art computer lab, a phonology lab, and access to computerized language data. Approximately 25% of our students come from other countries and contribute greatly to our programs.

Department of Philosophy

Office: Faculty Offices 201

Telephone: 408-924-4468

Email: philosophy@sjsu.edu

Website: www.sjsu.edu/philosophy

Professors

Jason Aleksander

Karin Brown

Bo Mou

Carlos A. Sanchez

Janet Stemwedel, Chair

Anand Vaidya

Associate Professors

Rebecca Chan
Jordan Liz

Assistant Professors

Riana Betzler
Noah Friedman-Biglin
Etienne Brown

Overview

Philosophy majors read and discuss ideas generated by some of the greatest thinkers in history and learn to examine contemporary theoretical problems from a philosophical perspective. Noted for its treatment of philosophy in a global context as well as its engagement with issues reflecting its Silicon Valley setting, the Department of Philosophy offers classes taught by faculty recognized and highly regarded for both teaching and scholarship. Our curriculum is equally strong in traditional and innovative areas of philosophy, such as feminist and applied philosophy, and we offer both undergraduate and graduate degree programs. Because the study of philosophy develops a student's ability to analyze ideas and arguments, to think critically and to write well, a major in philosophy provides pre-professional training in a number of fields, including the fields of law, medicine, psychology and theology.

Department of World Languages and Literatures

Office: Clark Hall 421

Telephone: 408-924-4602

Email: world-languages@sjsu.edu

Website: www.sjsu.edu/wll

Professors

Damian Bacich, Chair
Jean-Luc Desalvo
Romey Sabalius
Yasue K. Yanai

Associate Professors

Vanessa Fernández
Eleanor Marsh
Cheyla Samuelson
Chunhui Peng

Assistant Professors

Avizia Long
Ángel Ruiz Blanco
Michiko Uryu

Overview

Connect with the world. Study abroad. Become multilingual. Deepen your understanding of other cultures. Read great works of literature. The Department of World Languages and Literatures helps students communicate effectively and thrive in a global context. Our programs are multifaceted, our faculty and students are multicultural, our curriculum is international.

We offer majors and minors in four of the most widely spoken languages in the world: Mandarin Chinese, Japanese, French, and Spanish, and an M.A. program in Spanish. We also offer language minors in International Business, Portuguese, German, Asian Studies and Latin American Studies, and a single subject teaching credential program in French, Japanese, Mandarin Chinese and Spanish.

We offer language and culture courses in Hebrew, Filipino/Tagalog, Russian and Vietnamese. Our graduates work as teachers, executives, translators, interpreters, civil servants, journalists, and hold many other occupations in global business and finance.

Language Proficiency

The appropriate level of proficiency in the language of study is required of candidates for a teaching credential and is a prerequisite for enrollment in any graduate course.

School of Journalism and Mass Communications

Office: Dwight Bentel Hall 105

Telephone: 408-924-3240 (Voice); 408-924-3229 (Fax)

Email: journalism@sjsu.edu

Website: www.sjsu.edu/jmc/

Professors

Richard Craig
Diana Stover
Phylis West-Johnson, Director

Associate Professors

Mathew Cabot
Duane Michael Cheers
John Delacruz, Associate Director
Cathy Zongchao Li
Timothy Hendrick

Assistant Professors

Shaun Fletcher
Nisha Garud-Patkar
Belen Moreno
Tina Korani
Manel Palos Pons

Overview

Founded in 1936, the School of Journalism and Mass Communications is the largest school of its kind in Northern California. In 2012, the journalism program was ranked among the top two in California, and the top 50 in the U.S. It is also nationally accredited by the Accrediting Council on Education in Journalism and Mass Communications (ACEJMC). We offer undergraduate degrees in advertising, convergence journalism and public relations, and a master's degree in mass communications. Timely, ethical and responsible visual storytelling utilizing new technologies is the focus in all our degree programs. We offer students access to scholarships, regional and global internships, and competitive prizes unavailable to students in non-accredited programs. Our faculty are experienced multimedia journalists, photographers, writers, graphics designers and advertising, public relations, and social media executives. Our graduates have won six Pulitzer Prizes and excelled in careers as online content producers, publishers, editors, news directors, and communication executives.

Students who wish to change their major at SJSU to one of those offered in the JMC School must fulfill department-specific coursework and GPA requirements as specified on the department website.

School of Music

Office: Music Building 178
Telephone: 408-924-4673
Email: music@sjsu.edu
Website: www.sjsu.edu/music

Professors

Jeffrey Benson
Fred S. Cohen, Director
Pablo E. Furman, Associate Director
Diana M. Hollinger
Aaron J. Lington

Associate Professors

Gordon Haramaki
David Vickerman
Erica Buurman

Assistant Professors

Corie Brown
Catalina Barraza-Gerardino
Michael Hernandez
Christopher Luna-Mega
Craig McKenzie

Overview

Located in the heart of Silicon Valley, SJSU's School of Music is a recognized leader in the performing arts. Accredited by the National Association of Schools of Music (NASM), the National Council of Accreditation of Teacher Education (NCATE), and the California Commission on Teacher Credentialing (CCTC), the School produces some of the finest music teachers, composers, performers, and scholars in the world. Our curriculum includes courses in composition, performance, music skills, technology, pedagogy, and improvisation. Student performance organizations include, among others, Concert Choir, Choraliers, Jazz Orchestra, Opera Theater, Wind Ensemble, Symphony Orchestra, and the Spartan Marching Band. Our music education program produces some of California's leading

educators, and administrators, and our certified music teacher graduates are in particularly high demand in the Bay Area and throughout California.

Music Honors Program

The Music Honors Program is designed for the superior student who has outstanding talent and scholastic ability. The program is open to senior music majors with a 3.5 average in the major and an overall university grade point average of 3.0. Approval by the student's major advisor and the director is required prior to registering for honors courses. The proposed program may follow one of three general plans: a senior recital with an accompanying project paper (a historical-programmatic essay on the recital content); a major written project on some aspect of history, literature, or music education; or a major project in the field of music composition. Following official school approval, the student will register for three units of directed study in MUSC 190A (1 unit) and MUSC 190B (2 units) under a designated faculty member. The student must maintain a grade point average of 3.5 in the school and a 3.0 overall university grade point average throughout the senior year, and complete MUSC 190A and MUSC 190B to receive departmental honors at the awarding of the baccalaureate degree.

College of Information, Data & Society

Office: Student Union West

Telephone: 408-924-2670

Email: cpge@sjsu.edu

Website: www.sjsu.edu/cpge

Leadership:

Michael Meth, Interim Dean
Sandy Hirsh, Associate Dean Academics

Overview

The mission of the College of Information, Data & Society is to provide access to relevant educational programs that allow individuals to gain knowledge in a dynamic and innovative environment and become engaged, productive members of an evolving global society. We aspire to be a globally recognized College that shapes the future of the workforce, preparing students for professions that exist today and those that have yet to be created. Our college is the nexus for connecting professionals, institutions, businesses and industries, locally and from around the world, to the knowledge, resources, and talents of Silicon Valley's premier public university.

Academics

The College of Information, Data & Society offers interdisciplinary and forward-looking academic programs that prepare professionals to address the world's increasing challenges around analyzing, managing, protecting, securing, designing, organizing, and preserving data, information, records, and archives through technology-oriented and user-focused practices. The two academic units within the College of Information, Data & Society are the Department of Applied Data Science and the School of Information. Students have the opportunity to study full-time or part-time, learn in person or online, and pursue their education through a bachelor's degree, master's degrees, a credential program, and certificate programs.

This college offers the following programs:

- BS in Information Science and Data Analytics
- MS in Data Analytics
- MS in Informatics
- Master in Library and Information Science
- Master in Archives and Records Administration
- Teacher Librarian Credential
- Post Master's Certificate in Library and Information Science
- Advanced Certificate in Strategic Management of Digital Assets and Services

Department of Applied Data Science

Office: Interdisciplinary Science Building 850

Telephone: 408-924-2639

Email: applied-data-science@sjsu.edu

Professors

Lee C. Chang
Jerry Z. Gao, Department of Computer Engineering
Simon Shim, Chair

Assistant Professors

Shih Yu Chang
Guannan Liu
Mohammad Masum
Vishnu Pendyala
Shayan Shams

Overview

The Applied Data Science Department offers academic programs to address emerging workforce demands of interdisciplinary talents designing and deploying intelligent solutions to real-world data challenges. Students acquire a comprehensive understanding and knowledge of the principles, methodologies and technologies of data science. Silicon Valley is known for its leadership in the big data economy and its demand for talent in response to the exponential growth of data. The department continuously seeks guidance from leading data professionals and companies to ensure that the curriculum is relevant for growing the talents needed in Silicon Valley.

Local data professionals regularly interact with our students through teaching classes, speaking at seminars, sponsoring internships, and supervising master projects. Faculty members actively engage with industry partners and sponsors to assess our curricula and update learning objectives in order to provide the most up-to-date skills for supporting the innovations from this region.

The department is an academic hub, in partnership with other SJSU departments and industry partners, for promoting education and research in applied data science. The MS in Data Analytics program is designed to address the immense demands of data science professionals and provides students with the advanced education necessary to draw insights from real data and apply analytical skills to solve practical problems.

School of Information

Office: Clark Hall 417

Telephone: 408-924-2490

Email: ischool@sjsu.edu

Website: ischool.sjsu.edu

Professors

Anthony Bernier
Anthony Chow, Director
Geoffrey Liu
Ziming Liu
David Loertscher
Lili Luo
Linda Main, Associate Director
Kristen Rebmann
Michael Stephens

Associate Professors

Joni Bodart
Michelle Chen
Mary Ann Harlan
Dan Nathan-Roberts
Tonia San Nicolas-Rocca
Virginia Tucker

Assistant Professors

José Aguiñaga
Jessica Bushey
Souvick Ghosh
Ulia Gosart
Deborah Hicks
James Hodges
Darra Hofman
Norman Mooradian
Michele Villagran

Overview

The San Jose State University (SJSU) School of Information prepares individuals for careers as information professionals. Graduates work in diverse areas of the information profession, such as user experience design, digital asset management, information architecture, electronic records management, information governance, digital preservation, and librarianship. The SJSU School of Information is a recognized leader in online education and received the Online Learning Consortium's Outstanding Online Program award. For more information: ischool.sjsu.edu

College of Science

- [Overview](#)

- Advising Center
- Special Centers
- Teaching Credential Programs
- Medical Product Development Management MS Program

Office: Science 127

Telephone: 408-924-4800

Website: www.sjsu.edu/science

Leadership:

Michael Kaufman, Dean

Shelley Cargill, Associate Dean of Academic Programs and Student Success

Miri VanHoven, Associate Dean for Research

Overview

San José is at the center of Silicon Valley, known worldwide for its research institutes and industries that set the standard for scientific and technological innovation. San José State is the metropolitan university of the region, and the academic programs of the College of Science prepare students for rewarding careers through our bachelor's and master's level degree programs in the biological sciences, physical sciences, mathematics and computer science fields. Our departments have established partnerships with local employers where students find training and employment opportunities.

The College of Science provides the lower division core biology, chemistry, mathematics and physics courses supporting majors in other technical disciplines (such as engineering). As part of the university general education requirements, we offer courses in quantitative reasoning, the physical universe and its life forms, and earth and the environment. Furthermore, we teach the discipline-specific courses for the science and mathematics teacher credential programs.

Successful science students come from many backgrounds. Some enter the university immediately upon graduation from high school. Others, who have worked or have various life experiences, enroll as either full or part-time students in order to continue their education and better their career opportunities. The maturity, laboratory skills and experience of these students enrich our programs. We have several programs to increase the participation of women and underrepresented students in professional level science. Our College of Science Student Success Center, formerly COSAC, is available to assist students with their academic advising questions.

There are active student clubs associated with each major, several of which have won national recognition for their professional and community service activities. Club members provide mutual support and are able to network with professionals in their field. A list of programs and courses can be found on each department page in the catalog.

- Department of Biological Sciences
- Department of Chemistry
- Department of Computer Science
- Department of Geology
- Department of Mathematics and Statistics
- Department of Physics and Astronomy
- Moss Landing Marine Laboratories
- Science Education Program

College of Science Student Success Center (formerly COSAC)

Office: Located in Duncan Hall (DH) 212

Telephone: 408-924-5193

Email: science-advisingcenter@sjsu.edu

Website: www.sjsu.edu/science-ssc/

Special Centers

The College of Science has several unique interdisciplinary instructional research centers and programs: the Master of Biotechnology, MBT, the Medical Product Development Management, MS, the Clinical Lab Scientist Certificate Program, the Clinical Genetic Molecular Biology Molecular Biologist Advanced Certificate, the Center for Applied Mathematics, Computation and Statistics, the Institute for Modern Optics, the Materials Characterization and Metrology Center, the W.M. Keck Facility for Chemical Research, and the Moss Landing Marine Laboratories. Partially funded by external grants and contracts, these centers provide our students opportunities to participate in sponsored research projects. Cooperative programs with local industries and government laboratories are additional sources of professional experience and financial support for our science majors.

Teaching Credential Programs

Two single subject credential programs are coordinated by the College of Science, in collaboration with the Connie L. Lurie College of Education. The single subject professional programs are designed for individuals who are interested in teaching science or mathematics in middle schools or high schools. The Science Education Program offers single subject credential programs in biology, chemistry, earth science and physics. The Department of Mathematics and Statistics offers a mathematics single subject credential program. For detailed information, contact the appropriate program coordinator.

Medical Product Development Management, MS

Office: Duncan Hall (DH), Room 452

Telephone: 408-924-4853

Website: www.sjsu.edu/mpdm/

Email: kunal.sampat@sjsu.edu

Professors

Sulekha Anand, Statistics

Kunal Sampat, Interim Director, Medical Device & Diagnostics Clinical Trials

Leonard Wesley, Bioinformatics

Arvinder Loomba, PMP, Business Management

Sheldon Mullins, Biopharmaceutical Regulatory Affairs

Vivan Tran, Pharmacovigilance & Drug Safety

Overview

The Masters of Science (MS) degree in Medical Product Development Management (MPDM) is offered by SJSU's College of Science, in collaboration with Professional & Global Engagement and the Lucas Graduate School of Business. The MPDM MS program combines clinical research, regulatory affairs, bioinformatics and customized technical classes with MBA-level business and management courses. The industry-relevant curriculum was designed in collaboration with experts from biomedical companies in the greater San Francisco Bay area to prepare students for careers in the biopharmaceutical, medical devices and in-vitro diagnostics industries. To accommodate students who work full-time, courses are offered during evenings or weekends, and several classes are offered online for scheduling flexibility.

Department of Biological Sciences

Office: Duncan Hall 254

Telephone: 408-924-4900

Email: bioassistant-group@sjsu.edu

Website: sjsu.edu/biology

Professors

Tzvia Abramson

Shelley Cargill

Rachael French, Chair

Jeffrey Honda

Susan Lambrecht

Elizabeth McGee-Bergerol

Cleber Ouverney

Sabine A. Rech

Elizabeth Skovran

Scott Shaffer

Miri VanHoven

Katherine Wilkinson

Associate Professors

Bree Grillo-Hill

Assistant Professors

Walter Adams

Jessica Castillo Vardaro

Maya deVries

Theresa (Thanh) Dinh

David Ensminger

Jennifer Johnston

Leila Khatib

Fred Larabee

Nino Alexander Payumo

Melissa Pickett

Sonia Singhal

Kumar Vishal

Kate Wilkin

Overview

As leaders in the education of a highly trained and diverse scientific workforce, our mission is to provide a dynamic educational experience by engaging our students in hands-on, inquiry-based learning activities at the bench and in the field while cultivating an inclusive learning environment that acknowledges and respects individuals from all backgrounds. Through these experiences, our students will gain a conceptual and experiential understanding of the biological sciences spanning from molecules to ecosystems.

Our Program goals are to:

- Promote the success of our diverse student population in an inclusive and equitable community.
- Make substantial contributions to the scientific community through our research efforts and that of our students.

- Foster creativity, a sound theoretical foundation, and the ability to communicate effectively and interact cooperatively with people from diverse backgrounds.
- Provide students with rigorous laboratory and field experiences within the context of their regular coursework.
- Create individualized mentoring opportunities and state-of-the-art learning experiences within the context of our faculty research programs.
- Educate students to be intellectually agile and technologically proficient.
- Affirm students' intersecting identities while supporting and fostering their academic development.

Honors Program

Students may apply for the honors program in Biology in BS - Biological Sciences (all concentrations). Students wishing to complete the honors program must:

1. Have a GPA of 3.5 or higher in courses required in the major,
2. Have an overall SJSU GPA of 3.0 or higher, and
3. Complete BIOL 186, BOT 186, or ZOOL 186 - Senior Thesis.

Senior thesis courses involve the student in the completion of a research project under the direct supervision of a faculty member. As such, the research project must be on a mutually agreed upon topic. It is recommended that the student submit a proposal for research to the faculty member and have that proposal approved in the last semester of his/her junior year. The student is required to present the results of the research in written form and as a seminar.

Department of Chemistry

Office: Duncan Hall 518

Telephone: 408-924-5000

Email: chemoffice@sjsu.edu

Website: www.sjsu.edu/chemistry

Professors

David J.R. Brook

Resa M. Kelly

Gilles Muller

Roy K. Okuda

Karen A. Singmaster, Chair

Associate Professors

Laura C. Miller Conrad

Madalyn R. Radlauer

Roger H. Terrill

Annalise Van Wyngarden

Ningkun Wang

Abraham Wolcott

Assistant Professors

Taylor Arhar

Emma Carroll

Philip Dirlam

Nicholas Esker

Gianmarc Grazioli

Andro Rios

Overview

Chemistry plays an integral role in solving everyday problems in areas such as energy production, pollution control and disease prevention. Our graduates go on to gain advanced degrees in chemistry, medicine, pharmacy, and dentistry or enter the job market directly, building careers in the biotechnological, biomedical, pharmaceutical, energy and green technology sectors. We provide broad access, high-quality education in the molecular sciences at both the bachelor's degree and master's degree levels. Undergraduates may specialize in biochemistry. Graduate degree candidates focus on analytical, bio-, computational, inorganic, nuclear, organic, polymer, or physical chemistry. Our curriculum, taught by experts in each of the subfields of chemistry, supplements traditional classroom courses with hands-on laboratory and research instruction. For teaching purposes, as well as to support the department's research mission, we maintain a large collection of state-of-the-art instrumentation, including mass spectrometers, spectrophotometers, and lasers.

Undergraduate Honors Program

Students must be nominated by their research advisor and are selected for department honors by the Chemistry Department faculty. To be nominated, chemistry majors need at least a 3.5 GPA in all chemistry coursework required for the major and a minimum of two semesters of research by the time of graduation. The student would also have to submit, in electronic form, a written research report to support the nomination.

Non-Compliance with Safety Rules

Failure to comply with proper procedures and prescribed safety precautions shall subject the student to removal from the laboratory and/or disciplinary action.

1. Any student who engages in unauthorized experimentation or who seriously disregards safety, thereby endangering themselves or others shall be withdrawn immediately from the class with a grade of "F".
2. Any student who shows persistent disregard for safety may have their grade lowered, and may risk being withdrawn with a final grade of "F".

Prerequisites

To enroll in a Chemistry Course that has another Course as a prerequisite requires that a grade of "C or better" (C- not accepted) be earned in the prerequisite course. Exceptions may be made only with instructor consent or if not explicitly stated in the course description.

Department of Computer Science

Office: MacQuarrie Hall 208
Telephone: 408-924-5060
Email: info-compsci@sjsu.edu
Website: www.sjsu.edu/cs

Professors

Thomas Austin
Robert Chun
Melody Moh, Chair
Teng-Sheng Moh, MS Data Science Graduate Coordinator
Jon Pearce

Christopher Pollett
Mark Stamp

Associate Professors

Philip Heller
Suneuy Kim
Katerina Potika
David Taylor
Leonard P. Wesley
Ching-seh Mike Wu

Assistant Professors

Faranak Abri
Sayma Akther
William Andreopoulos
Nada Attar
Fabio Di Troia
Genya Ishigaki
Mei-Chong Wendy Lee, MS Bioinformatics Program Coordinator
Saptarshi Sengupta
Navrati Saxena, MS Computer Science Program Coordinator
Mike Wood

Overview

Computer science is all about algorithms: inventing, testing, debugging and improving algorithms that might control a robot's brain, encrypt a stock trade, even simulate an ecosystem. Our bachelor's degree, provides a solid foundation in the basic theories that underpin computer software technology. For those who wish to pursue more advanced studies, our master's degree program offers convenient late afternoon and evening classes. Our prime Silicon Valley location fosters high-tech employment opportunities for our graduates, who currently make up a significant portion of the area's programmers, software architects, system analysts and computer scientists.

Honors Program

The requirements for computer science majors to graduate with departmental honors are: (1) at least a 3.0 G.P.A. overall, (2) at least a 3.5 G.P.A. in the major, (3) Completion of CS 180H - Individual Studies for Honors.

Minimum Grade Requirement

A grade of "C-" or better is required for courses being used to meet any requirement in any minor or major offered by the Department of Computer Science, including support courses.

Department of Geology

Office: Duncan Hall 321

Telephone: 408-924-5050 (Voice); 408-924-5053 (Fax)

Email: undergradadvisor-geology@sjsu.edu; gradadvisor-geology@sjsu.edu

Website: www.sjsu.edu/geology

Professors

Emmanuel Gabet, Graduat Program Coordinator

Ellen P. Metzger
Jonathan Miller, Chair
Donald L. Reed

Associate Professors

Kimberly Blisniuk
Carlie Pietsch
Ryan Portner

Assistant Professors

Nathaniel Bogie
Elizabeth Madden
Siri Veland

Overview

Sustainability, sea-level rise, water resources, landslides, earthquakes, agriculture - the Department of Geology specializes in increasing students' understanding of Earth's processes and resources. We offer general education courses, a rigorous, integrated undergraduate curriculum, and graduate courses and research. Our bachelor's degree program in Geology prepares students for graduate study in the geosciences as well as for careers in engineering and environmental consulting firms, regulatory agencies, and state and federal organizations (e.g., NASA, USGS, NOAA). Our bachelor's program in Earth System Science focuses on the complex processes within and feedbacks between the Earth Systems (geosphere, hydrosphere, biosphere, and atmosphere), including the interactions of humans with the Earth. Students obtaining this degree are well-positioned for careers in environmental remediation, natural resource management, and environmental policy. Our master's degree program particularly emphasizes the study of applied geology, surface processes, and tectonics, enabling graduates to advance to Ph.D programs and to secure jobs in fields such as environmental consulting, hydrogeology, geotechnical engineering, and hazards assessment.

Geology and Earth System Science Honors Program

Departmental honors in the BS Geology and Earth System Science degree programs are awarded to those majors who have achieved a 3.5 grade point average in their required departmental courses and have completed an undergraduate research project. A proposal for undergraduate research, including an identified Geology faculty supervisor, must be approved by the Geology honors committee for acceptance into the honors program. Completion of two units of Geology 180 and both written and oral presentation of research results are required for completion of the program.

Department of Mathematics and Statistics

Office: MacQuarrie Hall 308
Telephone: 408-924-5100
Email: math-info@sjsu.edu
Website: www.sjsu.edu/math

Professors

Martina Bremer
Bem Cayco-Gajic
Steven Crunk, Chair
Tim Hsu
Plamen Koev
Bee Leng Lee

Ferdinand Rivera
Cheryl Roddick
Mohammad Saleem
Slobodan Simic
Wasin So
Julie Sliva Spitzer

Associate Professors

Daniel Brinkman
Marion Campisi
Guangliang Chen
Dashiell Fryer
Andrea Gottlieb
Sogol Jahanbekam
Jordan Schettler
Liam Stanton
Cristina Tortora
Yan Zhang

Assistant Professors

Edgar Bering
Peter Gao
Jesse Geneson
Kyle Hambrook
Tahir Issa
Patrick Murphy

Overview

One of the oldest intellectual disciplines, mathematics plays a key role in many fields: cryptography, computer graphics, operations research, engineering and science. Students majoring in mathematics learn to communicate mathematical ideas effectively and to use basic computational skills, mathematical models and technology to solve practical problems. The Department of Mathematics and Statistics offers both undergraduate and graduate programs that prepare our alumni to work in industry and to teach in secondary schools or community colleges. In addition to a BA in Mathematics, we offer a BS in Applied Mathematics that trains students for more technical careers and incorporates student research projects at the Center for Applied Mathematics, Computation and Statistics (CAMCOS). The BS in Statistics provides foundational training for careers in statistics, data analytics, and data science, and also prepares students for graduate studies in statistics and related fields. We also offer four master's degrees: an MS and an MA in Mathematics, an MS in Statistics, and an MS in Data Science.

Honors Program

The requirements for mathematics majors to graduate with departmental honors are: (1) at least a 3.0 G.P.A. overall, (2) at least a 3.5 G.P.A. in the major, (3) Completion of MATH 180H - Individual Studies for Honors.

Restriction on Enrollment for Credit

Enrollment for credit in MATH 10, MATH 12, MATH 18A, MATH 70, MATH 71, MATH 71X, MATH 105, and MATH 106 will not be allowed for students who have received credit in MATH 19, MATH 30, MATH 30X, MATH 31, MATH 31X, MATH 32, or MATH 32X, unless the particular course in question is required for the student's major, minor or credential requirements.

Precalculus Proficiency Assessment (PPA)

Many students who wish to enroll in MATH 30, MATH 30X, MATH 42, MATH 42X, MATH 70, MATH 71 or MATH 71X are required to take the Precalculus Proficiency Assessment (PPA). Information regarding the PPA can also be found in the Mathematics and Statistics Department website.

Department of Meteorology and Climate Science

Office: Duncan Hall 620

Telephone: 408-924-5200 (Voice); 408-924-5191 (Fax)

Email: meteorology@sjsu.edu

Website: www.sjsu.edu/meteorology

Professors

Alison F. C. Bridger

Sen Chiao

Craig Clements, Chair

Eugene C. Cordero

Associate Professors

Minghui Diao

Elizabeth Walsh

Assistant Professors

Adam Kochanski

Mario Miguel Valero Pérez

Overview

The only one of its kind in the CSU system, the Department of Meteorology and Climate Science provides students with an in-depth knowledge of the atmosphere, preparing them for careers in the atmospheric sciences. Meteorology focuses on day-to-day weather; in climate science the focus is on the evolution of Earth's climate. We train students to measure, analyze, model and predict the state of the atmosphere into the next week and on into the next century, offering undergraduate and graduate programs that are strong in both theoretical and applied courses. Among our alumni are weather forecasters with both the National Weather Service and in the private sector, air pollution specialists, environmental consultants, science teachers, university professors, science writers and top scientists in the National Atmospheric and Oceanographic Administration (NOAA), the U.S. Armed Forces, and NASA. We are one of the most research-active departments on campus, enabling students at all levels to participate and benefit from supervised research activities.

Department of Physics and Astronomy

Office: DH 538

Telephone: 408-924-5210

Email: physics-astronomy@sjsu.edu

Website: physics.sjsu.edu

Professors

Ramendra D. Bahuguna

Peter T. Beyersdorf, Chair

Alejandro L. Garcia

Aaron Romanowsky
Kenneth Wharton
Neil Switz
Ehsan Khatami
Cassandra Paul

Associate Professors

Ranko Heindl
Thomas Madura

Assistant Professors

Curtis Asplund
Kassahun Betre
Brianne Gutmann
Hilary Hurst
Gina Quan
Christopher Smallwood

Overview

At the core of all science, physics helps us understand chemical reactions, protein folding, the Earth's interior, and the life cycle of stars. Among much else, physicists invented the semiconductor, the laser, and the electron microscope. They play key roles in the design and operation of spacecraft and in the development of electronic and optical instrumentation. The Department of Physics and Astronomy offers two MS degrees in Physics and Quantum Technology, and three undergraduate degrees: (1) a BS that prepares students for professional careers in applied physics or graduate study, and (2) a BA that combines a strong foundation in physics with electives that allow for a second area of concentration, such as computer science, chemistry, science education, or math and (3) a BA preparation for teaching which prepares students for teaching Physics in high-school or middle school and has them earn units towards their single-subject credential. Our faculty are experts in lasers and optics, computational physics, condensed matter, astrophysics, and physics education research. The department receives on average approximately \$1.8 million annually in external funding for sponsored research.

Moss Landing Marine Laboratories

Office: Moss Landing Marine Laboratories: Marine Science Graduate Program;
8272 Moss Landing Road; Moss Landing, CA 95039

Telephone: 831-771-4400

Email: mlml-info@sjsu.edu

Website: mlml.sjsu.edu/gradprog/

Professors

Ivano W. Aiello
Petra Dekens, Director
Michael H. Graham, Chair
Scott Hamilton
James T. Harvey

Associate Professors

Thomas Connolly
Birgitte McDonald

Assistant Professors

Maxime Grand

Amanda Kahn
Sarah Smith

Adjunct Professors

Colleen Durkin
David Ebert
Valerie J. Loeb
John S. Oliver
Iliana Ruiz-Cooley
G. Jason Smith
Richard M. Starr
Diana Steller
Alison Stimpert

Other Faculty

Katie Lage, Librarian

Overview

The second oldest marine lab on Monterey Bay, Moss Landing Marine Laboratories, (MLML), established in 1966, has an international reputation for excellence in marine science research and education. MLML administers the interdisciplinary master's of science degree in marine science for seven California State University (CSU) campuses: East Bay, Fresno, Monterey Bay, Sacramento, San Francisco, San José and Stanislaus. MLML's hands-on, field-oriented approach places students, faculty, research and staff where discoveries are made: at the frontiers of marine science worldwide. The wealth of nearby marine resources, excellent marine facilities and operations, renowned faculty and research-based curriculum combine to make the MLML program one of the best graduate programs of its kind in the United States. MLML provides students with a cutting-edge education that prepares them for careers in science, education and outreach, conservation, policy and management, and for doctoral studies.

Science Education Program

Office: Duncan Hall 224

Telephone: 408-924-4835

Email: scied@sjsu.edu

Website: www.sjsu.edu/scied

Professors

Resa Kelly, Director
Ellen Metzger
Cassandra Paul

Associate Professors

Elizabeth Walsh

Assistant Professors

Tammie Visintainer

Overview

The College of Science's Science Education program offers courses that aim to develop research-based approaches to teaching and learning at the secondary and higher education levels. In cooperation with the Connie L. Lurie College of Education and the Department of Teacher Education, we oversee the single subject teacher credential

program in science through advising, coursework offerings and student teacher supervision. We support the preparation of justice-centered, socially responsive science teachers in the areas of biology, chemistry, earth science, and physics. In addition, we offer a master's degree in Science Education engaging our students in innovative science education research. We also train undergraduate learning assistants, and we offer a minor in Science Education.

College of Social Sciences

- Overview
- College of Social Sciences Student Success Center
- Centers and Institutes
- Programs
- Courses

Office: Washington Square Hall 103

Telephone: (408) 924-5300

Email: college-social-sciences@sjsu.edu

Website: www.sjsu.edu/socialsciences

Leadership:

Anne Marie Todd, Dean

Clifton M. Oyamoto, Associate Dean for Academic Programs and Student Success

Lois Takahashi, Associate Dean for Research and Faculty Success

Overview

Programs in the College of Social Sciences prepare students for work and life in Silicon Valley and a rapidly changing world. Our twelve departments provide training for careers in counseling, criminology, environmental restoration, computerized mapping, public administration, economic analysis, organizational communication, international relations, ergonomics, urban and regional planning, and countless other fields in business, government, teaching and human services. Major courses of study emphasize the contributions of the many cultures that form our community. Internships are encouraged to help students relate academic work to the opportunities and needs of this diverse region. Completion of one of our undergraduate majors also provides an excellent foundation for advanced graduate work in one of the disciplines or at a professional school such as law or business.

New technologies increasingly improve our instruction and link us to the innovative industry of our region and to the educational resources of the world, but personal interaction between students and faculty is still prized within the College of Social Sciences. Capable and interesting teachers, active student clubs and small classes provide ideal environments for learning. If you are interested in majoring in one of the social sciences, contact an advisor in one of our departments or the dean's office. A list of programs and courses can be found on each department page in the catalog.

- Department of African American Studies
- Department of Anthropology
- Department of Chicana and Chicano Studies
- Department of Communication Studies
- Department of Economics
- Department of Environmental Studies
- Department of History
- Department of Justice Studies
- Department of Political Science

- Department of Psychology
- Department of Sociology and Interdisciplinary Social Sciences
- Department of Urban and Regional Planning

Academic Advising and Student Success

College of Social Sciences Student Success Center

Office: Clark Hall 240

Telephone: 408-924-5363

Email: socsci-success@sjsu.edu

Website: www.sjsu.edu/socsci-ssc/

The College of Social Sciences Success Center (CoSS SSC) is dedicated to providing a welcoming and inclusive advising environment for students. We are committed to student success, promoting lifelong learning, and providing students the tools to make informed decisions about their academic goals. We provide General Education advising for undergraduate students majoring or intending to major in any of the departments in the College of Social Sciences (CoSS). We are committed to helping you develop a clear path to graduation and supporting your academic success.

Centers and Institutes

The Centers and Institutes of the College of Social Sciences further enriched the educational, research and training opportunities provided to our students and faculty.:

- The Spatial Analytics and Visualization (SAVI) Center uses the power of geography and Geographic Information Science to produce impactful research and facilitate knowledge exchange by organizing public events, and bringing together scholars and professionals.
- Burdick Military History Project supports the study and teaching of military history through public lectures, the Veterans Oral History Project, and its specialized collection of materials relating to military history. Contact the Department of History.
- The Center for Economic Education supports high school teachers interested in developing Advanced Placement (AP) courses or improving existing AP Economics courses. Contact the Department of Economics.
- The SJSU Communication Center offers academic support for students seeking help with their public speaking, writing, and general communication skills through workshops and individual tutoring.
- College of Social Sciences Ethnic Studies Collaborative works to strengthen African American Studies, Asian American Studies, Chicana and Chicano Studies, and Native American and Indigenous Studies programs at SJSU and throughout the CSU. See the CSU Task Force on the Advancement of Ethnic Studies report for more information.
- East Asian Regional Materials and Resources Center (EARMARC) provides audio-visual materials for high school and college students in Northern California. The video and film library currently holds about 200 videos and reels, most of which are related to China or Japan. The collection also includes slide sets and audio materials. Almost all areas of East Asian society and culture are covered.

- The Environmental Resource Center (ERC) is run by student directors and supervised by a faculty advisor. In addition to organizing behavior changes via on campus events, the ERC is working to move our campus towards sustainable use of water, energy and materials.
- The Human Rights Institute is an "Organizational Research and Training Unit" under the California State University system that specializes in human rights research, journalism, and policy design. HRI students and faculty study pressing social problems and work with community organizations, stakeholders, and policy makers to inform and design solutions according to relevant scholarship, human rights law, and international best practices. Further, the SJSU HRI is building the Human Rights News Network-a source of original and relevant human rights reporting from students, faculty, and Institute partners.
- The Institute for Metropolitan Studies is an interdisciplinary center for research, service, and public programming with a focus on issues of significance to San José and the greater San Francisco Bay Area. It engages in the issues facing our region through hosting powerful public events, often in collaboration with other institutions and community groups.
- The Institute for Public Affairs and Civic Engagement (IPACE) is designed to facilitate the study of politics and public policy in the Silicon Valley and the civic engagement of students through internships, service learning, and sponsorship of research talks led by SJSU faculty and members of the broader community.
- The Record Clearance Project provides presentations regarding expungement law and employment rights of people with criminal convictions, LiveScan fingerprinting, Speed Screening interviews and others.
- The Sourisseau Academy for State and Local History promotes a better understanding of California's state and local history, with an emphasis on the history of Santa Clara Valley, through graduate scholarships and collections of historical source materials.

Programs

Teaching Preparation Programs

- Social Science, Preparation for Teaching (Single Subject), BA - This major is designed for students interested in teaching history, political science (government), economics, or ethnic studies in high school or middle school. The following course work satisfies San José State University's requirements for a BA in Social Science Preparation for Teaching. The BA Social Science Preparation for Teaching, offered by the Department of History, is an approved program by the California Commission on Teacher Credentialing (CCTC). Students completing the program qualify for a waiver of the subject matter examination (CSET for Social Science) required to earn a teaching credential.
- The Environmental Studies, Preparation for Teaching, BA offered by the Department of Environmental Studies is designed for students interested in teaching in elementary or middle school. The coursework satisfies University requirements for a BA in Environmental Studies and is a program approved by the Teacher Credentialing in the State of California (CTC) for waiver of the Commission-approved subject matter examination (CSET for Multiple Subjects). Thus, students completing this program are eligible to apply for the Multiple Subject Teaching Credential (K-8) program.
- African American Studies, BA + Single Subject Credential in Social Science + Teaching, MAT SAGE Program - This Spartan Accelerated Graduate Education (SAGE) Scholars Program prepares students to teach History, Social Science, and Ethnic Studies in California public high schools. The Department of African American Studies provides an interdisciplinary curriculum and comprehensive liberal arts education by training students to appreciate diversity and multicultural American society. As juniors, African American Studies, BA majors are eligible to apply for a SAGE Scholars program that allows them to be concurrently

enrolled in the Single Subject Credential - Social Science and Teaching, MAT programs (with an optional Spanish bilingual authorization) as an undergraduate. This combined degree pathway can be completed in five years.

- Chicana and Chicano Studies, BA + Single Subject Credential in Social Science + Teaching, MAT - This Spartan Accelerated Graduate Education (SAGE) Program prepares students to teach History, Social Science, and Ethnic Studies in California public high schools. The Department of Chicana and Chicano Studies provides an interdisciplinary curriculum and comprehensive liberal arts education by training students to appreciate diversity and multicultural American society. As juniors, Chicana and Chicano Studies, BA are eligible to apply for a SAGE Scholars program that allows them to be concurrently enrolled in the Single Subject Credential - Social Science and Teaching, MAT programs (with an optional Spanish bilingual authorization) as an undergraduate. This combined degree pathway can be completed in five years.

Department of African American Studies

Office: Washington Square Hall 216

Telephone: 408-924-5871

Email: afam-studies@sjsu.edu

Website: www.sjsu.edu/afam

Associate Professors

Travis D. Boyce, Chair

Assistant Professors

Rana B. McReynolds

Wendy M. Thompson

Overview

An indispensable part of the mission of a metropolitan university, the Department of African American Studies provides a comprehensive liberal arts education by training our students to appreciate diversity and multicultural American society. Our unique interdisciplinary curriculum focuses on the areas of: race & technology, interracial intimacies and mixed race identity in the U.S., politics, urbanization, religion, U.S. history, sociology, psychology, African history/politics, gender, the civil rights movement, and general education courses. Our faculty contributes to scholarship in the field, and we are intellectually and professionally linked to local and national African American communities through our membership and support of professional associations such as the National Council for Black Studies, the Association for the Study of African American Life and History, (ASALH), the Association for Ethnic Studies, among others.

Department of Anthropology

Office: Clark Hall 469

Telephone: 408-924-5710

Email: anthropology@sjsu.edu

Website: www.sjsu.edu/anthropology

Professors

Jan English-Lueck
A. J. Faas
Roberto Gonzalez
Marco Meniketti
Charlotte Sunseri, Chair

Assistant Professors

Melissa Beresford
Erika Carrillo
John Marlovits

Overview

Anthropology Program

Anthropology majors study how humans live and have lived, present and past, and apply that knowledge to contemporary issues, learning how to articulate an anthropological perspective on human behavior. Our students develop skills in research, data analysis and clear and effective communication, preparing them to live in a complex, culturally diverse world. The Department of Anthropology's core curriculum provides an overview to the discipline as well as courses in cultural anthropology, archaeology, and physical anthropology. There are many opportunities for students to engage in research and service projects, and our faculty are scholars who bring their research into the classroom to enhance learning. We offer a BA in anthropology, an MA in applied anthropology, and a BA in behavioral science. Our graduates pursue careers in a wide range of professions, including law, medicine, business, social work, and health care.

Behavioral Sciences Program

Behavioral science majors develop an interdisciplinary perspective on human behavior and an understanding of the psychological, social and cultural dimensions to being human in a complex society. Offered cooperatively by the Departments of Anthropology, Psychology and Sociology, the Behavioral Science Program is housed in the Department of Anthropology, which oversees academic advising. The program prepares graduates for a variety of jobs that require working with social science data and with people. Many of our alumni have pursued graduate work in health care, social work, human resources, and other fields. The Department of Anthropology provides all academic advising for the Behavioral Science Program.

Department of Chicana and Chicano Studies

Office: Clark Hall 231

Telephone: 408-924-5760

Website: www.sjsu.edu/ccs

CCS Mailbox: ccs-dept@sjsu.edu

Professors

Ella Maria Diaz, Chair
Maria Luisa Alaniz
Rebeca Burciaga

Julia Curry Rodriguez
Marcos Pizarro

Assistant Professors

Jonathan Gomez
Johnny Ramirez
Christine Vega

Overview

Created in 1968, the Department of Chicana and Chicano Studies (CCS) at San José State University educates and serves students through interdisciplinary education based on principles of social justice. CCS at SJSU is the oldest Graduate Program in Chicana/o Studies in the United States and is one of only five Graduate Programs in Chicana/o Studies in California and the only one north of Santa Barbara, California. The CCS department prepares students to understand and respond to conceptualizations of race and ethnicity, as they relate to and are challenged by Chicana/o communities. CCS students develop critical thinking skills and comparative analyses between Chicana and other People of Color communities. Thus, CCS students integrate major sociopolitical issues, cultural experiences, and intellectual theories from their CCS courses that they then apply to their careers, lives, and other post-graduate work.

CCS offers an academic major with three areas of specialization in Cultural and Creative Expression, Institutions and Community Engagement, and Transnationalism and Global Relations; an academic minor for SJSU undergraduate students, open to all academic majors; and a graduate program with three areas of specialization in Policy Studies, Education, and Comparative Ethnic Studies.

Department of Communication Studies

Office: Hugh Gillis Hall 108
Telephone: 408-924-5360
Email: commstudies@sjsu.edu
Website: www.sjsu.edu/comm

Professors

Stephanie J. Coopman
Deanna L. Fassett
Ge Gao
Rona T. Halualani
Tabitha Hart
Kathleen McConnell
Matthew Spangler
Anne Marie Todd
Andrew F. Wood, Chair

Associate Professors

Kristen Cole
Oona Hatton
Marie Haverfield
Luis Felipe Gómez
Priya Raman

Assistant Professors

Alejandro Artiga-Purcell

Overview

The Department of Communication Studies prepares competent and ethical communicators for meaningful participation in diverse local and global communities. The B.A. and M.A. programs focus on four primary areas, or cornerstones: democracy, diversity, technology, and globalization. Democracy affirms the balance of individual freedom and socio-political consensus shaped through dialogue, argument, and persuasion between individuals and groups. Diversity explores the variety and complexity of communication efforts to shape beliefs, values, and perceptions in different communities and cultures. Technology interrogates the implications of human communication in a mediated world. Globalization recognizes the interconnectedness, integration, fragmentation, and conflict within human societies and cultures in global contexts. Our undergraduate and graduate degree programs prepare alumni for a wide range of careers in areas such as education, sales, marketing, public relations, human resource development, law, politics, and community service.

Honors Program

Students requesting departmental honors in Communication Studies will be evaluated against the following criteria: (1) a minimum GPA of 3.5 in all four unit upper division courses in the major (Foundations, Inquiry, Practice Courses, 101C and 199C); (2) have at least a 3.0 overall GPA; and (3) satisfactorily complete one of the department's four-unit graduate seminars.

Department of Economics

Office: Dudley Moorhead Hall 147

Telephone: 408-924-5400

Email: economics@sjsu.edu

Website: www.sjsu.edu/economics

Professors

Colleen Haight
Matthew Holian, Chair
J. Michael Pogodzinski

Associate Professors

Rui Liu
Justin Rietz

Assistant Professors

Darwyn Deyo
Aidin Hajikhameneh
Paul-Vincent Lombardi
Patralekha Ukil

Overview

Economics stresses the role of markets and institutions on business, political and socioeconomic outcomes. By emphasizing applied economics, the program encourages majors to hone their strategic thinking skills, learn to

anticipate the unintended consequences of actions, and engage in consequential thinking about changes over time. By stressing oral and written communication and statistical analysis, the program encourages majors to acquire the skills necessary to communicate ideas. Economics graduates use economic tools to evaluate and pose reasoned solutions to multi-faceted, complex problems, as a result, they are in high demand in any field where decision making and reasoning are emphasized. Our bachelor's degree is an excellent springboard to an MBA or law degree. Our master's program prepares graduates for research and policy positions in government and business. Although we emphasize applied economics, we also provide students with the rigorous preparation necessary to pursue doctorates in economics.

Honors Program

To graduate with Economics Department honors student must have an overall GPA of 3.2; a GPA of 3.5 for all upper division economics courses. For more information, and to apply for honors, please consult the Economics Department website.

Department of Environmental Studies

Office: Washington Square Hall 118

Telephone: 408-924-5450 (Voice); 408-924-5477 (Fax)

Emails: environmental-studies@sjsu.edu, envstudies-ms@sjsu.edu (for Master's Program)

Website: www.sjsu.edu/envs/

Professors

Katherine Cushing, Chair and Global Studies Coordinator

Gary A. Klee

Dustin Mulvaney

Rachel O'Malley, Graduate Program Coordinator

William Russell

Lynne A. Trulio, Undergraduate Advisor

Assistant Professors

Costanza Rampini

Overview

The mission of the Department of Environmental Studies is to provide students with rigorous interdisciplinary tools to study, manage and resolve environmental challenges. As part of this mission, we are committed to providing an inclusive, multicultural and anti-racist education for all our students. Among the first such programs in the country, the Department of Environmental Studies at SJSU has been granting degrees and training environmental professionals since 1970. Today, our students experience hands-on learning through field courses, the Center for Development of Recycling, the Environmental Resource Center and off-campus internships. Alumni career paths include environmental impact assessment, habitat restoration, renewable energy, water policy, environmental education, sustainable agriculture, recreation and park management, environmental policy, integrated waste management, and recycling. The Department offers MS, BS, and BA degrees in Environmental Studies (including BA Teacher Prep) and a BA in Global Studies. The Global Studies degree is an interdisciplinary program that looks at the world holistically, examining the connections between international human migrations, the movement of goods, technology transfers, and environmental change. We also offer a range of minors to students across campus, from environmental restoration to sustainable energy. The Department's MS in Environmental Studies is one of the few research-based Master of Science degrees in Environmental Studies in the country.

Structure of the Environmental Studies BS, BA and MS Degrees

The undergraduate Environmental Studies degrees are structured around four components: 1) a preparation sequence; 2) core classes in Environmental Studies, which provide a solid foundation in environmental issues integrating natural and physical science, social science, and the humanities; 3) an advisor-approved minor focused on a specific career pathway; and 4) electives. Electives may consist of classes both within and outside the department and generally require advance approval by an Environmental Studies faculty advisor. The Master of Science graduate degree is a thesis-based program that requires original research. Information on all aspects of these degrees is found on the advising sheets available in the department office in Washington Square Hall 118 and on the department website.

Department of History

Office: Dudley Moorhead Hall 134

Telephone: 408-924-5500

Email: history@sjsu.edu

Website: www.sjsu.edu/history

Professors

Glen Gendzel
Libra Hilde, Chair
Xiaojia Hou
Mary Pickering
Jonathan P. Roth
Wendy Rouse, Coordinator; Social Science Teacher Preparation

Associate Professors

Katharine Olson

Assistant Professors

Alberto Garcia

Jewish Studies Program Coordinator

Victoria Harrison, Lecturer

Overview

History provides the tools to understand the world and to make sense of it in the past, present, and future. The SJSU Department of History offers undergraduate and graduate programs that teach our students to read carefully, compare sources, make judgments, and communicate persuasively using evidence-based research. Graduates of our programs often become teachers, but most work in other fields such as law, journalism, the arts, museums, libraries, archives, media, non-profits, consulting, government, and every field of business. Internships are available and Phi Alpha Theta, the History honors society, sponsors academic and social activities for our students. The Social Science Teacher Preparation (SSTP) program helps prepare students for teaching careers. At the graduate level, our primary fields of study are U.S. history, European history, and World history. Many of our MA graduates teach at local middle schools, high schools, and community colleges. Our faculty and students conduct research that draws on the special resources of the MLK Library as well as outstanding local archives such as History San José, the California History Center at De Anza College, the Hoover Institution at Stanford University, and the Bancroft Library at the University of California, Berkeley.

Honors Program in History

History and/or Social Science Teacher Preparation majors may qualify for admission to the History Department honors program after completing 15 upper division units in history. To apply to graduate with History departmental honors, the student must have an overall GPA of 3.0, a GPA of 3.5 for all History upper division courses, or the permission of the chair. If accepted, qualified seniors must complete one of the following: HIST 221, HIST 230, HIST 240, HIST 241, HIST 272, HIST 274, HIST 276, HIST 280, HIST 283, or HIST 288, with a grade "B" or higher.

Department of Justice Studies

Office: McQuarrie Hall 524

Telephone: 408-924-2940 (Voice); 408-924-2953 (Fax)

Email: justice-studies@sjsu.edu

Website: sjsu.edu/justicestudies

Professors

Alessandro De Giorgi, Undergraduate Coordinator
Sang Hea Kil
Paul Knepper, Chair
James Lee

Associate Professors

Ericka Adams, MS Justice Studies Coordinator
Edith Kinney, Legal Studies Coordinator
Claudio Vera Sanchez, Justice Studies Programs Coordinator
Bryce Westlake
Yue (Wilson) Yuan, Internship Coordinator

Assistant Professors

Mark Barash, Forensic Science Program Co-Coordinator
Shawna Bolton, Forensic Science Program Co-Coordinator
Sambuddha Ghatak
Gabriela Gonzalez
John Halushka, Internship Coordinator
Grace Howard, Human Rights Coordinator
Amy Martinez
Justin Strong
Jodie Warren

Overview

Since 1930, the Department of Justice Studies has developed, promoted and fostered social justice and empowered communities. In an ever-changing social, political and economic environment, we remain committed to academic excellence, social activism and policy-relevant research. We offer BS and MS degrees in justice studies, a BS in forensic science and minors in justice studies, forensic studies, an MS in Criminology, legal studies and human rights. Among other topics, our widely regarded faculty conduct research in the areas of human rights, immigration, violence against women, sex offender behavior, family violence, and DNA profiling. Student groups and clubs include Alpha Phi Sigma, Chi Pi Sigma and the Forensic Science Students. Our graduates work in a multitude of settings including

probation, parole, corrections, law enforcement, crime labs, and nonprofit agencies, or they continue their education in law school or other graduate programs.

Department of Political Science

Office: Clark Hall 471

Telephone: 408-924-5550

Email: polisci@sjsu.edu

Website: www.sjsu.edu/polisci

Professors

James C. Brent

Melinda Jackson

Garrick Percival, Chair

Kenneth B. Peter

Lawrence Quill

Karthika Sasikumar

Associate Professors

Sergio Bejar-Lopez

Mary Currin-Percival

Danijela Dudley

Assistant Professors

Sara Benson

Xintong Chen

Overview

Political science majors tackle the public issues of the day as well as the timeless issues of government, public policy and the political process. The Department of Political Science offers a BA in political science. Our courses cover U.S. politics and public administration, public law, comparative politics, international relations and political theory. Our extensive internship program includes funded internships in Sacramento and Washington, D.C., and our students have the opportunity to participate in a Model United Nations and the honor society Pi Sigma Alpha. We prepare our graduates for advanced graduate study as well as careers in law, public policy analysis, teaching, government service, legislative staffing, political consulting, interest group representation, international relations and other fields. Contact us at 408-924-5550 or visit us at the Political Science Department website.

Honors Program

The achievements of political science majors with an overall GPA of 3.20 and a 3.50 GPA in political science are recognized by the department honors program. These outstanding students are eligible to enroll in POLS 190H - Honors Thesis. Students who attain the required GPA and complete the honors thesis graduate with Honors in Political Science. Interested students should consult the department chairperson.

Department of Psychology

Office: Dudley Moorhead Hall 157

Telephone: 408-924-5600

Email: psychology@sjsu.edu

Website: www.sjsu.edu/psych

Professors

Arlene Asuncion
Glenn Callaghan
Cheryl Chancellor-Freeland
Gregory Feist
Jennifer Gregg
Megumi Hosoda
Laree A. Huntsman
Elena Klaw
Sean Laraway
Clifton Oyamoto
Susan Snyckerski
Howard Tokunaga
David Schuster
Mark Van Selst
Erin Woodhead

Associate Professors

Matthew Capriotti
Valerie Carr
Shinchieh Duh
Cary Feria
Christine Ma-Kellams
Evan Palmer, Chair

Assistant Professors

Jacquelyn Brady
Lesther Papa
Christina Tzeng

Overview

The Department of Psychology seeks to develop skilled critical thinkers who use their knowledge of the principles of human behavior, cognition, and emotion to work and live effectively and fully in a multicultural global society. Our curriculum covers the major areas in the field of psychology to help students understand the complexities of human thought and behavior in a sociocultural context. In addition, the Department provides students with training in research methods, statistics, and scientific writing. Psychology students have opportunities to gain practical experience by working with our faculty in research labs, community outreach projects, Silicon Valley companies, and so on. The Department offers a BA in Psychology, a minor in Human Systems Integration, a minor in Psychology, an MA in Research and Experimental Psychology, an MS in Clinical Mental Health Counseling, and an MS in Industrial and Organizational Psychology. Detailed information about our faculty, students, and programs may be found on the Psychology Department website.

Psychology Honors Program

Students requesting departmental honors in psychology will be evaluated against the following criteria at graduation: (1) a minimum aggregate GPA of 3.5 across all psychology course work; (2) evidence of distinguished scholarly work, as indicated by the completion of a BA thesis (PSYC 199), the honors seminar (PSYC 195), or work leading to a published paper or presentation at a professional meeting; (3) both PSYC 117 and STAT 115; (4) completion of a section of PSYC 121A, B, C, E. Contact a psychology advisor for details.

Department of Sociology and Interdisciplinary Social Sciences

Office: Dudley Moorhead Hall 241

Telephone: 408-924-5320

Email: sociology@sjsu.edu; asianamericanstudies@sjsu.edu; wgssprogram@sjsu.edu

Website: www.sjsu.edu/siss

Professors

Maria Luisa Alaniz

William Armaline

Tanya Bakhru, Coordinator, Women, Gender, and Sexuality Studies Program

Natalie Boero, Chair

Hien Duc Do, Associate Chair

Carlos Eduardo Garcia

Associate Professors

Faustina DuCros

Yvonne Y. Kwan, Coordinator, Asian American Studies Program

Megan Thiele

Assistant Professors

Soma de Bourbon

Susana Gallardo

Kerri J. Malloy, Coordinator, Native American and Indigenous Studies Program

Trung Nguyen

Saugher Nojan

Joanne Rondilla

Preston O. Rudy

Morgan Sanchez

Elizabeth Sweet

Yolanda Wiggins

Overview

The Department of Sociology and Interdisciplinary Social Sciences educates students about the social processes that create, maintain, and transform our society. The department has four programs: Asian American Studies; Native American and Indigenous Studies; Sociology; and Women, Gender and Sexuality Studies.

The Asian American Studies (AAS) major provides an interdisciplinary liberal arts education. The AAS program is designed to develop student skills in critical analysis, writing, communication and reasoning, while retrieving, documenting and analyzing the diverse artistic, economic, social, political and historical experiences of Asian Americans in the United States.

The Sociology major uses sociological foundations and applications as well as interdisciplinary approaches to the study of society and in teacher education training. Sociologists analyze how social institutions and social structures such as the economy, politics, education, the family, mass media, and the criminal justice system affect individuals in society. The major provides students with the skills and knowledge to navigate the social, political, economic,

historical, and cultural issues that build and sustain effective leadership in our complex global society. Sociology has two major degree program tracks: Sociology, Sociology with Concentrations in (1) Community Change and (2) Race and Ethnic Studies.

The Women, Gender, and Sexuality major investigates how lives are shaped by gender and gender identity, race, class, sexuality, and nation. The program emphasizes the importance of understanding gender as integral to social and political structures of power. Students will obtain skills to cultivate critical thinking, cultivation of dialogue, coalition building, appreciation of diversity, and contribution to social change based on feminist frameworks.

The department offers several minor courses of study: Asian American Studies; Sociology; Sociology of Education; and Women, Gender and Sexuality Studies. These degree programs lead to careers in education, government and public policy, criminal justice, nonprofit organizations, marketing research, human resource management, social work, and other areas.

Department of Urban and Regional Planning

Office: Washington Square Hall WSQ 216A

Telephone: 408-924-5882

Email: urbanplanning@sjsu.edu

Website: www.sjsu.edu/urbanplanning/

Professors

Asha Weinstein Agrawal

Vincent Del Casino, Provost and Vice President for Academic Affairs

Thomas Lester, Chair

Shishir Mathur

Kathrine Richardson

Associate Professors

Gordon Douglas

Assistant Professors

Bo Yang

Ahoura Zandiatashbar

Department Overview

The Department of Urban and Regional Planning at SJSU offers undergraduate and graduate degrees in Geography, and an accredited Master in Urban Planning degree as well as an accredited Master in Public Administration degree. The department also offers minors in Geography, Geographic Information Science, and Urban Studies. In addition, the department offers seven advanced graduate certificates emphasizing different focus areas such as affordable housing, community development, environmental planning, geographic information science, real estate development, transportation, and urban design. Planning and geography are multi-disciplinary fields and our world class faculty have diverse disciplinary backgrounds including architecture, economics, history, geography, sociology and urban planning. Our programs emphasize experiential learning and career-oriented academic preparation, enhanced by our downtown San Jose location. The department has cultivated long-standing relationships with industry partners, government agencies, and community-based organizations. Our graduates go on to rewarding careers in Silicon Valley companies such as Apple, Facebook and Google as well as government agencies and non-profit organizations in the Bay Area.

Certificates

The Department of Urban and Regional Planning at San José State University offers seven advanced certificates (listed below).

The certificate programs are open to graduate degree students enrolled in any program at San José State University (SJSU). Members of the public who hold an undergraduate degree may also complete any of the graduate certificate programs through SJSU's Open University, upon submission of an application form to the Graduate Advisor, and subsequent approval by the Graduate Advisor. To earn a certificate, students must complete a total of nine to sixteen units of course work, depending on the certificate. If course work is taken through Open University, the maximum number of units allowed by SJSU policy may be applied towards the MUP degree. In addition, the student must:

- Maintain a minimum GPA of 3.0 over all semester credits of coursework applied towards the certificate.
- Earn a minimum grade of "B Minus" in every course applied towards the certificate.
- Complete all the course work within seven years.

For detailed information on these programs, see the department website or contact the department's Graduate Student Advisor.

Geography Program

Geographers study places to understand and explain what makes places special and unique. Geographers study the natural environment, the built environment, and the socio-demographic characteristics of people. Geographic Information Science (GIS) uses the power of location integrated with computing technologies to analyze large volumes of data to make informed decisions. As the only Geography degree-granting program in Silicon Valley, the program takes advantage of its downtown San Jose location to emphasize urban and cultural geography, economic geography, and geospatial methods. The program has developed and cultivated long-standing relationships with government agencies, other universities, and the City of San Jose. GIS is a rapidly growing field and our courses will give students the analytic and problem-solving abilities necessary to begin rewarding careers immediately after graduation. Prospective students are encouraged to consult the department website for additional information.

Geography Honors Program

Graduation with departmental honors in geography can be achieved by successful completion of any geography graduate seminar open to those seniors with a 3.5 GPA in geography, or completion of an Honors Project under supervision of a department faculty member. Students must have a 3.5 GPA in geography to qualify for an Honors Project option.

Urban Planning Program

The Department of Urban and Regional Planning began at SJSU in 1970 and offers the only accredited Master in Urban Planning degree in Silicon Valley. Urban planners balance visionary thinking with pragmatic problem solving, working in partnership with multiple stakeholders to address challenges related to growth and change. Urban planners work within the frameworks of formal and informal institutions to solve problems related to affordable housing, climate change, economic development, environmental protection, public health, and transportation. The program has a long history of working in partnership with local communities to address their planning needs. As a graduate program, Urban Planning attracts a diverse student body, including many non-traditional students who come to the program with a wealth of knowledge and experience. The program has a strong network of alumni who work in the region in city, county, and state government agencies, private sector firms, and nonprofit organizations.

Professional & Global Engagement

Professional & Global Engagement (PGE) offers professional education programs tailored to meet the diverse needs of current and prospective students, as well as professionals aiming to enhance their careers. Our innovative programs are designed to provide real-world knowledge and are delivered through flexible modes such as online learning, asynchronous study, and convenient off-site locations. In addition to our professional programming, we offer programs and comprehensive support tailored to the unique needs of our international student community. Through our Global Engagement programming and services, we strive to create a welcoming and inclusive environment, offering a range of services designed to enhance academic success, cultural integration, and overall student experience. From technical skill development to cultural immersion opportunities, we are committed to empowering students for success in a diverse and interconnected world.

SJSU Online

The mission of SJSU Online is to expand higher education access and degree attainment for learners requiring a fully online degree pathway. The special session degree completion programs offered through SJSU Online meet these potential graduates where they are, offering flexible 100% online pathways for degree attainment focused on the needs of the working learner, including multiple admission cycles, 8-week academic terms, and a per-unit tuition structure that is cost-effective for the part-time learner. These programs are offered through a special session that requires a separate application process. If interested, please contact one of our Enrollment Counselors for more information.

Professional Education

Professional & Global Engagement (PGE) offers professional education programs to current and prospective students and professionals seeking to expand their learning and advance in their careers by applying real-world knowledge. Our programs, offered in innovative modes (online, asynchronous, and accessible off-site locations) with accessible schedules (evenings, weekends, and summers) ensure that individuals from all walks of life (traditional students, re-entrants to the workforce, career changers, and working professionals) have access to our program offerings.

An academically and financially viable unit of San José State University, PGE is one of the most diverse (in types of programs offered), innovative, and successful units in the twenty-three campus California State University (CSU) system and has been serving the largest number of students over the past three years with the most extensive portfolio of graduate and undergraduate academic programs.

In partnership with the seven academic colleges, we offer a variety of professional degree programs at the Master's level, fully online undergraduate degree completion programs, advanced certificates, credential programs, and more.

In addition to our degree programs, we offer credit-earning courses to augment and complement regularly scheduled classes. Open University allows course access to non-matriculated students (including disqualified students) on a space-available basis to pursue their educational or personal enrichment goals and earn college credit.

Winter Intersession and Summer Intersession allow current SJSU students and the public an opportunity to take classes for college credit in winter and summer; we have a robust offering of courses, including General Education (GE) courses. These accelerated-format university courses are perfect for meeting prerequisites, completing GE or major course requirements, or enabling a faster pace toward graduation.

PGE also has non-credit continuing education courses to offer professionals (e.g., teachers, nurses, etc.) an opportunity to quantify their time in professional development and training activities by having the university maintain a record of their educational accomplishments for non-credit educational and career enhancement experiences.

Global Engagement

We are committed to internationalizing our campus to cultivate an environment of diversity and inclusion, and to graduate students who are prepared to live and lead in an increasingly globalized world.

SJSU serves more international students than any other master's granting university in the U.S. Our students have high success in obtaining internships and work opportunities in Silicon Valley via curriculum practical training during their studies, and once they graduate, they have opportunities to participate in OPT/STEM OPT.

Our International Student & Scholar Services office (ISSS) offers comprehensive immigration advising and co-curricular support programming for our international students and scholars. The goal of ISSS is to enhance the students' experience in the U.S. and integrate them into our community, while also contributing to their success during their tenure at SJSU and beyond.

In addition, our Study Abroad and Away office offers an extensive portfolio of off-campus globally-focused programs that strive to meet the personal, academic, and professional goals of our students. We aim to provide programs for all SJSU students to learn and discover other cultures first-hand, including study abroad (international) and away (domestic), short-term (winter, spring, and summer breaks), and long-term (semester and year-long) options.

Our International Gateways unit provides comprehensive support services and instruction to help non-matriculated international students thrive at our University. Through International Conditional Admissions, we help students apply for Conditional Admission/Eligibility to SJSU undergraduate and graduate degree programs. International students interested in studying abroad in Silicon Valley can participate in our Semester at SJSU program. In addition to regularly scheduled programs, we partner with global universities and SJSU academic departments to develop and deliver customized non-credit programs for students and professionals.

Our International House (I-House) provides a welcoming intercultural living environment to U.S. and international students and scholars affiliated with San Jose State University. The residents of I-House live together under one roof as an extended family in their home away from home at 360 S. 11th Street, near SJSU's main campus. With a supportive, skillful, and dedicated staff, it offers opportunities to enhance academic success and participate in a myriad of socio-cultural activities while facilitating intercultural communication and competence.

For more information about our programs, please visit the websites linked below.

Professional Education

Student Union
408-924-2670
www.sjsu.edu/professional/
pace@sjsu.edu

Study Abroad and Away (SAA)

Student Union
408-924-5931
www.sjsu.edu/current/studyabroad/
spartansabroad@sjsu.edu

SJSU International House

Student Union
408-924-6570
www.sjsu.edu/ihouse
ihouse@sjsu.edu

International Student and Scholar Services (ISSS)

Services and programs for international students
Student Union
408-924-5920
www.sjsu.edu/iss
international-office@sjsu.edu

Athletics (Intercollegiate)

Office: Alan B. Simpkins Intercollegiate Athletics Administration Building

1393 South 7th Street, San Jose, CA 95112

Telephone: 408-924-1200 (Voice); 408-924-1291 (Fax)

Professors

Travis Boyce, NCAA Faculty Athletics Representative

Leadership

Jeffrey Konya, Director of Athletics

See the Athletics Staff Directory for a complete list of Athletics leadership.

Overview

Intercollegiate athletics offers a comprehensive spectrum of 22 sports (9 men's and 13 women's) which compete at the NCAA Division I level (the highest level of collegiate competition). San Jose State University is a member of the Mountain West Athletic Conference. Over the years, San Jose State athletics teams have won 10 NCAA team and 50 individual championships.

Course offerings are designed to satisfy the needs and interests of highly skilled student-athletes and provide them with the highest level of intercollegiate athletics experience. Note: Courses are open only to those SJSU students who are currently on one of the Spartan team rosters.

College of Graduate Studies

Office: Administration Building 174

Telephone: 408-924-2427

Email: graduate-studies@sjsu.edu

Website: www.sjsu.edu/cgs

Leadership:

Marc d'Alarcao, Dean

Jeffrey Honda, Associate Dean of Graduate Programs

Amy Leisenring, Associate Dean of Inclusive Student Success

The College of Graduate Studies assists graduate programs and their faculty and students to succeed. The College of Graduate Studies supports program development, advising faculty in transforming existing degree and certificate programs or building new ones at the post-baccalaureate, master's, or doctoral level. The College of Graduate Studies is also a resource for students seeking scholarships or who are facing special challenges such as probation or disqualification. The college helps maintain academic integrity through the fair and consistent administration of graduate policies, including those issued by the Chancellor and by the university's Academic Senate. Its Graduate Admissions and Program Evaluations (GAPE) division supports students as they enter and work their way through various degree requirements. The College of Graduate Studies interprets and administers the policies and procedures outlined in the sections that follow.

The Interdisciplinary Studies Major for either a Master of Arts or a Master of Science degree provides an alternative for individuals whose desired study plans do not fit the degree offerings of any single existing degree program on campus. In most cases, a thesis is required for this degree. Applicants or graduate students in other majors who wish to undertake the Interdisciplinary Studies major should consult the College of Graduate Studies Interdisciplinary Studies website to obtain the Information and Application for Interdisciplinary Studies Majors [pdf]. The guide contains the Proposal for Interdisciplinary Studies Major, which must be completed to obtain initial approval by the Associate Dean of Graduate Studies to be able to enter the program.

- Interdisciplinary Studies, MA
- Interdisciplinary Studies, MS

Degrees

Lucas College and Graduate School of Business

The Lucas Graduate School of Business in the Lucas College and Graduate School of Business offers the following degree programs:

- Accounting and Analytics, MS
- Business Administration, MBA
 - Early Career
 - For Professionals
- Finance, MS
- Taxation, MS
- Transportation Management, MS

Connie L. Lurie College of Education

The Connie L. Lurie College of Education offers the following degree programs:

- Child and Adolescent Development, MA
- Counseling and Guidance, MA
- Educational Leadership, Concentration in Emancipatory School Leadership, MA
- Educational Leadership, EdD (Fully Online)
- Educational Leadership, EdD (Hybrid)
- Higher Education Leadership, MA
- Multilingual and Multicultural Literacy Education, MA
- Special Education, MA
- Speech Language Pathology, MS
- Teaching, Critical Bilingual Education (Spanish) Concentration, MAT
- Teaching, MAT

Charles W. Davidson College of Engineering

The Charles W. Davidson College of Engineering offers the following degree programs:

- Aerospace Engineering, MS
- Artificial Intelligence, MS

- Biomedical Engineering, Biomedical Devices Concentration, MS
- Biomedical Engineering, MS (General)
- Chemical Engineering, MS
- Civil Engineering, MS
- Computer Engineering, MS
- Electrical Engineering, MS
- Engineering Management, MS
- Engineering Technology, MS
- Engineering, MS
- Human Factors/Ergonomics, MS
- Human Factors/Ergonomics, User Experience Concentration, MS
- Industrial and Systems Engineering, MS
- Materials Engineering, MS
- Mechanical Engineering, MS
- Quantum Technology, MS
- Software Engineering, MS

College of Health and Human Sciences

The College of Health and Human Sciences offers the following degree programs:

- Audiology, AUD
- Kinesiology, MS
- Nursing, Family Nurse Practitioner Concentration, MS
- Nursing, MS
- Nursing Practice, DNP
- Nutritional Science, MS
- Occupational Therapy, MS
- Occupational Therapy Doctorate, OTD
- Public Health, MPH
- Social Work, MSW

College of Humanities and the Arts

The College of Humanities and the Arts offers the following degree programs:

- Art, Art History and Visual Culture Concentration, MA
- Art, Digital Media Art Concentration, MFA
- Art, Photography Concentration, MFA
- Art, Pictorial Art Concentration, MFA
- Art, Spatial Art Concentration, MFA
- Computational Linguistics, MS
- Creative Writing, MFA
- Design, MDes
- English, MA
- Linguistics, MA (Not Accepting Students)
- Mass Communications, MS
- Music Education, MA

- Music, MM
- Philosophy, MA
- Spanish, MA
- Teaching English to Speakers of Other Languages (TESOL), MA (Not Accepting Students)

College of Information, Data & Society

The College of Information, Data & Society offers the following degree programs:

- Archives and Records Administration, MARA
- Data Analytics, MS
- Informatics, MS
- Library and Information Science, MLIS

College of Science

The College of Science offers the following degree programs:

- Applied Mathematics, MS
- Bioinformatics, MS
- Biological Sciences, MA
- Biological Sciences, Ecology and Evolution Concentration, MS
- Biological Sciences, Molecular Biology and Microbiology Concentration, MS
- Biological Sciences, Physiology Concentration, MS
- Biotechnology, MBT
- Chemistry, MA
- Chemistry, MS
- Computer Science, MS
- Data Science, MS
- Geology, MS
- Marine Science, MS
- Mathematics, MA (General)
- Medical Product Development Management, MS
- Meteorology, MS
- Physics, MS
- Quantum Technology, MS
- Science Education, MS
- Statistics, MS

College of Social Sciences

The College of Social Sciences offers the following degree programs:

- Applied Anthropology, MA
- Chicana and Chicano Studies, MA
- Clinical Psychology, MS
- Communication Studies, MA

- Criminology, Global Criminology Concentration, MS
- Economics, MA
- Economics, Applied Economics Concentration, MA
- Environmental Studies, MS
- Geography, MA
- History, MA
- Justice Studies, MS
- Psychology, Industrial/Organizational Psychology Concentration, MS
- Psychology, Research and Experimental Psychology Concentration, MA
- Public Administration, MPA
- Urban Planning, MUP

Certificates

- Accounting Fundamentals Certificate
- Advanced Accounting Topics Certificate
- Advanced Certificate in Geographic Information Systems (GIS) Certificate
- Advanced Communication(s) and Research Methods Certificate
- Advanced Global Leadership Certificate
- Advanced Social Work Practice in Gerontology Certificate
- Advanced Social Work Practice in Mental Health Certificate
- Advanced Taxation Certificate
- Affordable Housing and Community Development Finance Certificate
- Applications of Technology in Planning Certificate
- Business Analytics Certificate
- Clinical Genetic Molecular Biologist Scientist Training Program Certificate
- Clinical Laboratory Scientist (CLS) Training Program Certificate
- Community Design and Development Certificate
- Computational Linguistics Certificate
- Cybersecurity Engineering Certificate
- Cybersecurity Foundations Certificate
- Cybersecurity: Core Technologies Certificate
- Environmental Planning Certificate
- Ethics of Science and Emerging Technologies, Advanced Certificate
- Fundamentals of Cybersecurity Certificate
- Global Citizenship Certificate
- Global Philosophical Traditions Certificate
- Graduate TESOL Certificate (Not accepting students)
- High Technology Taxation Certificate
- High-Speed and Intercity Rail Management Certificate
- Higher Education Teaching Certificate
- International Taxation Certificate
- Library and Information Science Post-Master's Certificate
- Mindfulness-Based Health and Human Services Certificate
- Nursing Specialty Advanced Certificate
- Philosophy Post-baccalaureate Certificate
- Professional and Technical Writing Certificate

- Real Estate Development Certificate
- Secure Software Engineering Certificate
- Secure Test Engineering Certificate
- Six Sigma Black Belt Certificate
- Strategic Management of Digital Assets and Services Certificate
- Tax Practice Certificate
- Theory, Knowledge and Practice about Autism Spectrum Disorders Certificate (Not Accepting Students)
- Translation and Interpretation Certificate
- Transportation and Land Use Planning Certificate
- Transportation Management Certificate
- Transportation Safety, Security, and Emergency Management (TSSEM) Certificate
- Undergraduate TESOL Certificate

Credentials

- California Library Media Teacher Services Credential - now Teacher Librarian Credential
- Education Specialist Preliminary Teaching Credential: Early Childhood Special Education
- Education Specialist Preliminary Teaching Credential: Extensive Support Needs
- Multiple Subject Credential
- PK-3 Early Childhood Education (PK-3 ECE) Specialist Instruction Credential
- Pupil Personnel Services (PM-PPSC) Post-Master's Credential
- Education Specialist Preliminary Teaching Credential: Mild/Moderate Support Needs
- Pupil Personnel Services (PPS) School Counseling Credential
- Pupil Personnel Services (PPSC) Credential (Social Work)
- Single Subject Credential - Art
- Single Subject Credential - English
- Single Subject Credential - Mathematics
- Single Subject Credential - Music
- Single Subject Credential - Physical Education
- Single Subject Credential - Science
- Single Subject Credential - Social Science
- Single Subject Credential - World Languages
- Teacher Librarian Credential

Added Authorizations

- Adapted Physical Education Added Authorization
- Bilingual Authorization in Spanish
- Child Welfare and Attendance (CWA) Authorization
- Introductory Computer Science Supplementary Authorization
- Early Childhood Special Education Added Authorization (Not Accepting Students)

Undergraduate Education

Office: Administration Building, 159

Telephone: 408-924-2447

Website: Undergraduate Education

Email: undergraduate-education@sjsu.edu

Leadership:

Heather Lattimer, Interim Vice Provost for Undergraduate Education (Education)

Melinda Jackson, Associate Dean of Undergraduate Education (Political Science)

Overview

Undergraduate Education (UE) is involved with all aspects of undergraduate academic matters that support retention and graduation of students. It includes the following areas and programs: Academic Preparation Programs, Campus Reading Program, Center for Community Learning and Leadership, CommUniverCity, General Education, Catalog, and Curriculum.

The courses offered by UE under the subject **University Studies (UNVS)** promote leadership, integrated and applied interdisciplinary academic experiences for students. UE also sponsors the Interdisciplinary Studies undergraduate degree, which is an individually designed course of study leading to a BA or BS degree. The Interdisciplinary Studies degree is designed for situations in which no existing university-level SJSU undergraduate degree major adequately accommodates academic professional aims. Students who complete an Interdisciplinary Studies degree shall be able to demonstrate the characteristics of "intentional learners" who can adapt to new environments, integrate knowledge from different sources, and continue learning throughout their life.

Icon Guide

Share catalog information on Facebook and Twitter.

Selecting this icon will generate a pop-up page formatted to neatly print.

Includes more information about how to use the catalog.

Provides a print-friendly version of the degree requirements. Always review requirements with your academic plan with your advisor.

Are there pages you visit frequently? Create a portfolio by clicking on the My Favorites link on any page. Add courses or programs by selecting the star symbol.

STEM CIP Codes for International Students

A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z

Classification of Instructional Programs (CIP) codes for Stem Optional Practical Training (OPT) and Curricular Practical Training (CPT).

CIP Code	Major/Concentration	Degree	Name of College
14.0201	Aerospace Engineering	BS	College of Engineering
14.0201	Aerospace Engineering	MS	College of Engineering
27.0301	Applied Mathematics	MS	College of Science
11.0102	Artificial Intelligence	MS	College of Engineering
30.1701	Behavioral Science	BA	College of Social Sciences
26.1103	Bioinformatics	MS	College of Science
26.0101	Biological Sciences	BA	College of Science
26.0101	Biological Sciences	MA	College of Science
26.0101	Biol Sci/Ecology and Evolution	MS	College of Science
26.0101	Biol Sci/Molecular Biology	BS	College of Science
26.0101	Biol Sci/Molecular Biology and Microbiology	MS	College of Science
26.0101	Biol Sci/Physiology	MS	College of Science
26.0101	Biol Sci/Systems Physiology	BS	College of Science
14.0501	Biomedical Engineering	BS	College of Engineering
14.0501	Biomedical Engineering	MS	College of Engineering
14.0501	Biomed Eng/Biomedical Devices	MS	College of Engineering
26.0101	Biotechnology	MBT	College of Science
14.0701	Chemical Engineering	BS	College of Engineering
14.0701	Chemical Engineering	MS	College of Engineering

40.0501	Chemistry	BA	College of Science
40.0501	Chemistry	BS	College of Science
40.0501	Chemistry/Biochemistry	BS	College of Science
40.0501	Chemistry	MA	College of Science
40.0501	Chemistry	MS	College of Science
14.0801	Civil Engineering	BS	College of Engineering
14.0801	Civil Engineering	MS	College of Engineering
30.3501	Climate Science	BS	College of Science
14.0901	Computer Engineering	BS	College of Engineering
14.0901	Computer Engineering	MS	College of Engineering
11.0701	Computer Science	BS	College of Science
11.0701	Computer Science	MS	College of Science
11.0199	Computer Science and Linguistics	BS	College of Science
52.1301	Data Analytics	MS	College of Information, Data & Society
30.7001	Data Science	BS	College of Science
30.0801	Data Science	MS	College of Science
40.0699	Earth System Science	BS	College of Science
26.1310	Ecology and Evolution	BS	College of Science
45.0603	Economics	BS	College of Social Sciences
45.0603	Economics	MA	College of Social Sciences
45.0603	Economics/Applied Economics	MA	College of Social Sciences
14.1001	Electrical Engineering	BS	College of Engineering
14.1001	Electrical Engineering	MS	College of Engineering

14.0101	Engineering	MS	College of Engineering
15.1501	Engineering Management	MS	College of Engineering
15.1501	Engineering Tech/Computer Network Syst Mngmt	BS	College of Engineering
15.0000	Engineering Tech/Manufacturing Systems	BS	College of Engineering
15.0000	Engineering Technology	MS	College of Engineering
3.0104	Environmental Studies	BA	College of Social Sciences
3.0104	Environmental Studies/Prep for Teaching	BA	College of Social Sciences
3.0104	Environmental Studies	BS	College of Social Sciences
3.0104	Environmental Studies	MS	College of Social Sciences
43.0406	Forensic Science/Biology	BS	College of Social Sciences
43.0406	Forensic Science/Chemistry	BS	College of Social Sciences
43.0406	Forensic Science/Crime Scene Investigation	BS	College of Social Sciences
43.0406	Forensic Science/Digital Evidence	BS	College of Social Sciences
45.0702	Geographic Information Science	BS	College of Social Sciences
40.0601	Geology	BS	College of Science
40.0601	Geology	MS	College of Science
30.3101	Human Factors/Ergonomics	MS	College of Engineering
30.3101	Human Factors/Ergonomics/User Experience	MS	College of Engineering
14.3501	Industrial and Systems Engineering	BS	College of Engineering
14.3501	Industrial and Systems Engineering	MS	College of Engineering
14.0101	Interdisciplinary Engineering	BS	College of Engineering
26.1302	Marine Biology	BS	College of Science
30.3201	Marine Science	MS	College of Science

14.1801	Materials Engineering	BS	College of Engineering
14.1801	Materials Engineering	MS	College of Engineering
27.0101	Mathematics	BA	College of Science
27.0101	Math/Prep for Teach (Integrated Teacher Ed Prog)	BA	College of Science
27.0101	Mathematics	MA	College of Science
14.1901	Mechanical Engineering	BS	College of Engineering
14.1901	Mechanical Engineering	MS	College of Engineering
40.0401	Meteorology	BS	College of Science
40.0401	Meteorology	MS	College of Science
30.1901	Nutritional Sci/Applied Nutrition & Food Sciences	BS	College of Health/Human Sciences
30.1901	Nutritional Science/Dietetics	BS	College of Health/Human Sciences
30.1901	Nutritional Science/Food Management	BS	College of Health/Human Sciences
30.1901	Nutritional Science	MS	College of Health/Human Sciences
15.1503	Packaging	BS	College of Health/Human Sciences
40.0801	Physics	BA	College of Science
40.0801	Physics/Preparation for Teaching	BA	College of Science
40.0801	Physics	BS	College of Science
40.0801	Physics	MS	College of Science
14.0903	Software Engineering	BS	College of Engineering
14.0903	Software Engineering	MS	College of Engineering
27.0501	Statistics	BS	College of Science
27.0501	Statistics	MS	College of Science

Course Descriptions

Activity/Physical Education Classes

The Department of Kinesiology identifies the following courses as "activity classes". DANC 154A and DANC 154B may also be used to satisfy the requirements in the Kinesiology, BS and Kinesiology, Preparation for Teaching, BS.

KIN 1 - Adapted Physical Activities

1 unit(s)

Structured individualized physical activities to enhance physical/motor fitness and develop an active, health-oriented lifestyle for students unable to participate in the general activity program.

Satisfies PE: Physical Education.

Repeatable for credit with instructor consent.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 2A - Beginning Swimming

1 unit(s)

This course is designed for the non-swimmer and beginning swimmer. It is assumed that all students enrolled in the class have had little or no experience in learning the basic skills of swimming. The course is designed to instruct the student in the basic skills necessary to enable him/her to swim safely in deep water. There are no prerequisites for the course.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 2B - Intermediate Swimming

1 unit(s)

This course is designed to meet the needs of students who have satisfactorily completed the skills involved in beginning swimming.

Satisfies PE: Physical Education.

Prerequisite(s): Beginning level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 2C - Advanced Swimming

1 unit(s)

This course is designed to refine and extend the development of advanced skills in swimming.

Satisfies PE: Physical Education.

Prerequisite(s): Intermediate level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 3 - Water Polo

1 unit(s)

Fundamental skills, techniques, strategies, rules, and knowledge necessary to safely and correctly play water polo.

Prerequisite(s): Beginning level swimming proficiency.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 7 - Mexican Folklorico Dance

1 unit(s)

Introduction to Mexican Folklorico Dance. Focus is on the development of fundamental Mexican Folk dance skills and knowledge. Review of the interrelationship of dance culture to origins, holidays, people, and historical context. Students learn danzas & Mestizo dances from various states and regions of Mexico (e.g. Veracruz Huasteca, Tamaulipas Norte) and indigenous community (e.g. Oaxaca Mixe) dance categories.

Satisfies PE: Physical Education.

Course may be repeated for credit for up to 4 units.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

Cross-listed with CCS 7. Chicana Chicano Studies is responsible for scheduling.

KIN 8 - Skin and SCUBA Diving

2 unit(s)

Both skin and SCUBA diving skills for enjoyment and to understand dangers connected with the sport. Only one unit can be applied for the physical education graduation requirement.

Misc/Lab: Lecture 1 hour/activity 3 hours.

Satisfies PE: Physical Education.

Prerequisite(s): KIN 2C (or equivalent).

Grading: Letter Graded

Note(s): Movement Area 6 Adventure

KIN 9A - Beginning Sailing

1 unit(s)

Basic skills and safety knowledge in small boats for those with little or no sailing experience.

Satisfies PE: Physical Education.

Prerequisite(s): Student must be able to swim 100 yards without stopping, tread water for 5 minutes, and exit from an overturned dinghy. Students will be tested for this in the SPX pool.

Grading: Letter Graded

Note(s): Movement Area 6 Adventure

KIN 10A - Beginning Kayaking

1 unit(s)

Beginning skills and knowledge for those with little or no experience of flat water kayaking. The emphasis will be on safe operation at all times.

Satisfies PE: Physical Education.

Prerequisite(s): Students must be able to swim 100 yards without stopping, tread water for 5 minutes, and exit from an overturned kayak. Students will be tested for this in the SPX pool.

Grading: Letter Graded

Note(s): Movement Area 6 Adventure

KIN 11A - Beginning Rowing

1 unit(s)

Basic skills and knowledge for those with little or no experience of sweep rowing or sculling. Initial classes will be on indoor rowing machines, then eight-oared boats will be used. Students will learn both how to row and how to cox; improvement of strength / fitness is central.

Satisfies PE: Physical Education.

Prerequisite(s): Swim 100 yards without stopping; tread water for 5 minutes; don lifejacket in the water. Tested in a pool.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 13A - Beginning Rugby

1 unit(s)

This course is designed to familiarize the student with the rules, skills and basic concepts of modern Rugby Union Football. The class will equip the student to be an informed rugby spectator and/ or participant.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 14A - Beginning Volleyball

1 unit(s)

This course provides the student with the opportunity to learn and develop the basic rules and skills of volleyball, the 6-6 offense and the defense against the 6-6 offense.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 14B - Intermediate Volleyball

1 unit(s)

This course provides the intermediate student with the opportunity to refine and perfect the basic volleyball skills and to master individual positions when using the 6-2 offense and the defense against the offense.

Satisfies PE: Physical Education.

Prerequisite(s): Beginning level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 14C - Advanced Volleyball

1 unit(s)

This course is designed to teach advanced skills, principles and techniques necessary and fundamental to understanding and playing volleyball.

Satisfies PE: Physical Education.

Prerequisite(s): Intermediate level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 15A - Beginning Basketball

1 unit(s)

This course is designed to assist students in the development of fundamental skills necessary for effective involvement in playing the game of basketball.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 15B - Intermediate Basketball

1 unit(s)

This course provides the intermediate student with the opportunity to refine and perfect basic basketball skills.

Satisfies PE: Physical Education.

Prerequisite(s): Beginning level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 16A - Beginning Team Handball

1 unit(s)

Development of beginning team handball skills. Knowledge and skills commensurate with playing beginning team handball. Improves the health-related components of fitness through a variety of drills and plays. Also provides an overall historical background of the sport of team handball.

Satisfies PE: Physical Education

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 18A - Beginning Handball

1 unit(s)

This course is focused on the development of fundamental handball skills, basic tactics, simple strategies, etiquette and sportsmanship, rules, and their application in beginning games.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 18B - Intermediate Handball

1 unit(s)

Course focuses on improving the quality of fundamental handball skills, learning intermediate handball skills/drills and application, developing intermediate handball tactics and strategies, good sportsmanship, and playing more effective single and double games in different formats.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 19A - Beginning Soccer

1 unit(s)

This course is designed to introduce students to the game of soccer, and to provide students with the fundamental ability and knowledge needed to enjoy this game as players and as spectators.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 19B - Intermediate Soccer

1 unit(s)

Designed for students with previous soccer experience to refine technical skills, enhance offensive and defensive tactical awareness, learn various strategy and game philosophies, and improve conditioning. Develop a greater understanding of the rules of the game with an emphasis on the application of skills and strategy in game play.

Satisfies PE: Physical Education.

Prerequisite(s): KIN 19A (or equivalent) or Instructor Consent.

Grading: Letter Graded

Note(s): Movement Area 5 Team

KIN 20A - Beginning Badminton

1 unit(s)

This course is focused on the development of fundamental badminton skills, basic tactics, simple strategies, etiquette, rules, and their application in single and double games.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 20B - Intermediate Badminton

1 unit(s)

This course is focused on improving the quality of fundamental badminton skills, learning intermediate badminton skills and their application, developing intermediate badminton tactics and strategies, good sportsmanship, and playing more effective single and double games in elimination, round robin, and team competitions.

Satisfies PE: Physical Education.

Prerequisite(s): Completed SJSU beginning badminton class or have equivalent skills/knowledge.
Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 20C - Advanced Badminton

1 unit(s)

This course is focused on improving the quality of fundamental and intermediate badminton skills, learning advanced skills and their application, developing advanced badminton tactics and strategies, good sportsmanship, and playing high level games.

Satisfies PE: Physical Education.

Prerequisite(s): Completed SJSU intermediate class or show equivalent skills/knowledge.
Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 21A - Beginning Tennis

1 unit(s)

This course is designed to give students a basic understanding of the game of tennis. Students will be given a chance to learn through lecture, demonstration, drilling and match play.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 21B - Intermediate Tennis

1 unit(s)

This course is focused on improving the quality of fundamental tennis skills, learning intermediate tennis skills and drills and application, developing intermediate tennis tactics and strategies, establishing proper manners, and playing more effective single and double games in elimination, round robin, and team competitions.

Satisfies PE: Physical Education.

Prerequisite(s): Completed SJSU beginning class or have equivalent skills/knowledge.
Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 22A - Beginning Racquetball

1 unit(s)

This course is focused on the development of fundamental racquetball skills, basic tactics, simple strategies,

etiquette, rules, and their application in single and double games.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 22B - Intermediate Racquetball

1 unit(s)

This course is focused on improving the quality of fundamental racquetball skills, learning intermediate racquetball skills/drills and application, developing intermediate racquetball tactics and strategies, good sportsmanship, and playing more effective single and double games in different formats.

Satisfies PE: Physical Education.

Prerequisite(s): Completed SJSU beginning class or have equivalent skills/knowledge.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 23A - Beginning Archery

1 unit(s)

This course is designed to introduce the student to the basic skills and concepts, provides the opportunity to learn, practice and analyze correct shooting form and to participate in a variety of archery tournaments.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 23B - Intermediate Archery

1 unit(s)

This course builds upon beginning level skills and knowledge and provides the opportunity to shoot a variety of different archery rounds.

Satisfies PE: Physical Education.

Prerequisite(s): Beginning level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 24A - Beginning Bowling

1 unit(s)

This course is designed to give students an understanding of the sport of bowling and develop fundamental

bowling skills.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 24B - Intermediate Bowling

1 unit(s)

This course is designed to meet the needs of students who have satisfactorily completed the skills in beginning bowling. The course will add more advanced theory and techniques.

Satisfies PE: Physical Education.

Prerequisite(s): Beginning level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 25A - Beginning Golf

1 unit(s)

Designed for those who have never played golf or who have played very little and have had no basic formal instruction. Provides the student with a sound set of fundamentals to prepare for further instruction, if desired.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 25B - Intermediate Golf

1 unit(s)

Development of intermediate golf skills and knowledge with a focus on technique that facilitates the acquisition of consistent intermediate level performance.

Satisfies PE: Physical Education.

Prerequisite(s): KIN 25A or equivalent.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 27A - Beginning Table Tennis

1 unit(s)

This course is focused on the development of fundamental table tennis skills, basic tactics, simple

strategies, etiquette, rules, and their application of in single and double games.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 27B - Intermediate Table Tennis

1 unit(s)

This course is focused on improving the quality of fundamental table tennis skills, learning intermediate table tennis skills and drills and their application, developing intermediate tactics and strategies, good sportsmanship, and playing more effective single and double games in elimination, round robin, and team competitions.

Satisfies PE: Physical Education.

Prerequisite(s): Completed SJSU beginning class or have equivalent skills/knowledge.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 28A - Beginning Gymnastics

1 unit(s)

This course is designed to develop the student's awareness and performance of basic skills in gymnastics.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 29 - Cardio Kickboxing

1 unit(s)

Cardio Kickboxing is a non-contact aerobic conditioning activity combining punches, kicks, traditional aerobic skills, and fitness activities. The course is designed to enhance cardiovascular endurance, muscular strength, and muscular endurance.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 30 - Pilates

1 unit(s)

Pilates employs an established exercise protocol designed to develop core strength, flexibility, posture, and

range of motion. The course covers the fundamentals of a Pilates workout with an emphasis on breathing, alignment, neutral spine, and core stability.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 31 - Body Sculpting

1 unit(s)

Body sculpting employs exercise augmented with moderate weights to enhance fitness. The course is designed to improve muscle tone and endurance, flexibility, balance, and core stability.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 32 - Aerobics

1 unit(s)

Aerobics incorporates exercise and music, using large, continuous, rhythmic movements to elevate the heart rate and produce a training effect. The course is designed to improve muscle tone and enhance cardiorespiratory endurance.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 33 - Advanced Aerobic Activities

1 unit(s)

Aerobic activities incorporating high intensity interval training, circuit training, cardio kickboxing, power step, and resistance training. This course is designed to enhance cardiorespiratory endurance, muscular strength and muscular endurance.

Satisfies PE: Physical Education.

Prerequisite(s): KIN 32 or KIN 34 or instructor consent.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 34 - Step Training

1 unit(s)

Step training is a low-impact aerobic conditioning activity designed to enhance cardiorespiratory endurance, muscular strength, and muscular endurance.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 35A - Beginning Weight Training

1 unit(s)

This course is designed to teach the basic concepts of weight training for muscular strength and endurance. Its goal is to provide students with knowledge about the principles involved in weight training and the health-related components of fitness through a variety of exercises.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 35B - Intermediate Weight Training

1 unit(s)

Designed for individuals with prior training experience and involves higher level exercises. Students will be exposed to a wide variety of machines as well as free weight exercises and will then design a program based on individual needs.

Satisfies PE: Physical Education.

Prerequisite(s): Beginning level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 36 - Conditioning through Cross Training

1 unit(s)

Designed to teach basic concepts of health and fitness by using a variety of exercise modalities to increase cardiovascular fitness and improve full-body strength and power. Students will acquire knowledge about the principles involved with cardiovascular fitness, physical conditioning, and the health and skill related components of physical fitness.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 37 - Fitness Walking

1 unit(s)

Fitness walking is a low-impact conditioning activity designed to develop cardiovascular fitness.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 38 - Beginning Jogging

1 unit(s)

Jogging is a moderate-impact activity designed to improve cardiovascular fitness.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 40A - Topics in Modern Dance I

2 unit(s)

Training experience in the field of beginning modern dance with varied topics. Can be repeated when topic changes.

Misc/Lab: Activity 4 hours.

Satisfies PE: Physical Education.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

Cross-listed with DANC 40A. Film and Theatre is responsible for scheduling.

KIN 41A - Topics in Ballet I

2 unit(s)

Training experience in the field of beginning ballet dance with varied topics. Can be repeated when topic changes.

Misc/Lab: Activity 4 hours.

Satisfies PE: Physical Education.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

Cross-listed with DANC 41A. Film and Theatre is responsible for scheduling.

KIN 42A - Topics in Jazz Dance I

2 unit(s)

Training experience in the field of beginning Jazz dance with varied topics. Can be repeated when topic changes.

Misc/Lab: Activity 4 hours.

Satisfies PE: Physical Education.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

Cross-listed with DANC 42A. Film and Theatre is responsible for scheduling.

KIN 45A - Beginning Lindy Hop and Night Club Swing

1 unit(s)

This course is focused on the development of fundamental Swing dance skills and knowledge. Steps, technique, and styling will be drawn from Lindy Hop, Jitterbug, Street Swing, Jive and Triple-Time Swing dances.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

Cross-listed with DANC 45A. Kinesiology is responsible for scheduling.

KIN 46A - Beginning Social Dance

1 unit(s)

This course is focused on the development of fundamental social dance skills and knowledge. Dances will be selected from the American Smooth (e.g. Waltz, Tango), American Rhythm (e.g. Rumba, Cha Cha) and night club (e.g. Hustle, West Coast Swing) dance categories.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

Cross-listed with DANC 46A. Kinesiology is responsible for scheduling.

KIN 47A - Beginning West Coast Swing

1 unit(s)

Designed to improve students' understanding of West Coast Swing dancing and to improve fundamental dance skills common to the dance.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

KIN 48A - Beginning Latin Dance

1 unit(s)

This course is focused on the development of fundamental Latin dance skills and knowledge. Dances will be selected from the International Latin, American Rhythm (e.g. Rumba, Cha Cha) and night club (e.g. Salsa) dance categories.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

Cross-listed with DANC 48A. Kinesiology is responsible for scheduling.

KIN 49A - Topics in Tap Dance I

1 unit(s)

Training and experience in the field of beginning tap dance with varied topics. Can be repeated when topic changes.

Misc/Lab: Activity 3 hours.

Course may be repeated for credit for up to 2 units.

Grading: Letter Graded

Note(s): Movement Area 3 Dance

Cross-listed with DANC 49A. Film and Theatre is responsible for scheduling.

KIN 50 - Tai Chi (Non-Combative)

1 unit(s)

Emphasis on knowledge and skill, development of the standard Simplified Tai Chi Form and applications of Tai Chi for life. It is assumed that students enrolled in the class have had little or no experience in Tai Chi.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 51A - Beginning Aikido

1 unit(s)

This course is focused on the philosophy, history, and basic skills related to the Japanese-derived martial art of Aikido.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 51B - Intermediate Aikido

1 unit(s)

This course is focused on the development of intermediate level skills and knowledge related to the Japanese-derived martial art of Aikido. It builds upon the basic movement patterns and falling skills introduced in the beginning class.

Satisfies PE: Physical Education.

Prerequisite(s): KIN 51A or equivalent Aikido skills and experience.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 52A - Beginning Judo

1 unit(s)

Course is focused on developing the fundamental skills and knowledge related to Judo. Included are basic groundwork and throwing techniques.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 52B - Intermediate Judo

1 unit(s)

This course is focused on development of intermediate level ground and throwing skills and learning in-depth strategies, philosophy, and culture related to Judo. It builds upon the basic ukemi, newaza, and tachiwaza techniques learned in the beginning class.

Satisfies PE: Physical Education.

Prerequisite(s): KIN 52A or equivalent judo skills and experience.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 52C - Competitive Judo

1 unit(s)

Prepares students to use Judo techniques in competitive tournaments. The course will offer intermediate and advanced skills (standing, mat and falling techniques) and strategies to improve competitiveness.

Satisfies PE: Physical Education.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): KIN 52A or KIN 52B, and/or instructor consent.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 53A - Beginning Karate

1 unit(s)

This course is focused on development of fundamental skills and knowledge related to Karate. Included are basic kicking, punching, and blocking techniques.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 53B - Intermediate Karate

1 unit(s)

This course is focused on development of intermediate level skills and knowledge related to Karate. It builds upon the fundamental skills and techniques developed in the beginning class.

Satisfies PE: Physical Education.

Prerequisite(s): KIN 53A or equivalent karate skills and experience.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 54A - Beginning Tae Kwon Do

1 unit(s)

This course is focused on development of fundamental skills and knowledge related to Tae Kwon Do. Included are basic patterns (poomse), kicking and one-step defenses.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 54B - Intermediate Tae Kwon Do

1 unit(s)

This course is focused on development of intermediate level skills and knowledge related to Tae Kwon Do. It builds upon the fundamental skills and techniques developed in the beginning Tae Kwon Do class.

Satisfies PE: Physical Education.

Prerequisite(s): KIN 54A or equivalent Tae Kwon Do skills and experience.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 55A - Beginning Self-Defense

1 unit(s)

This course is focused on development of fundamental skills and knowledge related to self defense. Included are mental and physical self-defense skills and techniques applicable under a variety of conditions.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 58A - Introductory Brazilian Jiu-Jitsu

1 unit(s)

Development of the essential skills and principles of Brazilian jiu-jitsu practice. Included are the basic escapes, sweeps, and submissions from the most common positions.

Grading: Letter Graded

Note(s): Movement Area 1 Combatives

KIN 61A - Beginning Hatha Yoga

1 unit(s)

In this course the student will learn the correct movements, postures, and sequence used in traditional Hatha Yoga.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 61B - Intermediate Hatha Yoga

1 unit(s)

Further exploration of the theories and practices of Hatha Yoga encompassing the second level series of traditional intermediate Hatha Yoga postures, breathing exercises, and relaxation techniques.

Satisfies PE: Physical Education.

Prerequisite(s): Beginning level or its equivalent.

Grading: Letter Graded

Note(s): Movement Area 2 Fitness

KIN 62A - Beginning Ice Skating

1 unit(s)

A beginning ice skating course that covers the skills identified by the International Ice Skating Association (IISA).

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 4 Individual/Dual

KIN 63A - Beginning Hiking and Backpacking

1 unit(s)

An introductory course designed to impart skills such as topographical map reading, navigation and hiking. The emphasis is on logistics and operations of adventure excursions and fitness in various wilderness environments.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 6 Adventure

KIN 65A - Beginning Ice Hockey

1 unit(s)

Basic skills, techniques, strategies and rules of ice hockey. No previous skating is required but the ability to skate is highly recommended.

Satisfies PE: Physical Education.

Grading: Letter Graded

Note(s): Movement Area 5 Team

Advertising

ADV 91 - Introduction to Advertising

3 unit(s)

Comprehensive survey of the basic principles of advertising. Topics include: strategic planning, integrated communications, audience targeting, creative strategy, advertising media, social responsibility, advertising ethics, international advertising and current issues in advertising.

Grading: Letter Graded

ADV 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ADV 93 - Design Fundamentals for Advertising 1

3 unit(s)

Introduces students to the ideation and design process as it relates to advertising. Students learn design thinking, ideation techniques, print design, screen design, advertising formats and storytelling across media platforms.

Grading: Letter Graded

ADV 94 - Design Fundamentals for Advertising 2

3 unit(s)

Introduction to digital video production and editing. Focus on learning how to tell a story by combining video and audio, story boarding, script writing, framing, creating a shot sequence, video editing and special effects using industry-standard software.

Grading: Letter Graded.

ADV 95 - Working With Type

3 unit(s)

Theory and practice of typography as they apply to graphics, advertising and other areas of visual communication. Through a series of projects students develop a greater sensitivity to typographic details to create successful typographic messages.

Grading: Letter Graded

ADV 116 - Spartan Daily Advertising Staff

3 unit(s)

Class constitutes the paid advertising staff of the online and print editions of the Spartan Daily. Students work with clients and handle the newspaper's advertising sales and production. Experience in selling and managing advertising space, both print and broadcast, and the practical applications of newspaper layout and design and the use of market research and market interpretation.

Daily lecture and production.

May be repeated for credit for up to 6 units.

Prerequisite(s): ADV 91 or instructor consent.

Grading: Letter Graded

ADV 121 - Strategic Planning/Communications

3 unit(s)

Tools and frameworks for marketing management and strategic communications, including addressing communication issues such as budgets, coordinating agency functions, and delivering an effective marketing and communications plan.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

ADV 122 - Business-to-Business Advertising

3 unit(s)

Principles and practices of developing marketing communications programs and collateral materials for business-to-business products and services; translating technical information into persuasive communications; direct marketing, and other forms of sales support communications.

Prerequisite(s): ADV 91.

Grading: Letter Graded

ADV 123 - Introduction to Branded Content

3 unit(s)

History, development, and current applications of traditional broadcast advertising, the Internet as an advertising medium, and the implications of emerging new media. Focus is on creative strategy and media strategy.

Prerequisite(s): ADV 91.

Grading: Letter graded

ADV 124 - Copywriting

3 unit(s)

Conceptual development. Advertising theory used in the development of writing, editing and evaluating advertising copy. Research methods and techniques. Ethical problems.

Prerequisite(s): ADV 91, MCOM 100W and ENGL 71.

Grading: Letter Graded

ADV 125 - Advertising Layout and Production

3 unit(s)

Principles of design applied to print advertising; print production theory and practical application. Preparation of layouts and mechanicals utilizing latest computer applications. Instruction in use of type, printing processes, types of paper, uses of color.

Prerequisite(s): ADV 91.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

ADV 126 - Media Planning and Buying

3 unit(s)

Theory, evaluation and selection of advertising media for a variety of target audiences; demographics and psychographics. Students plan, buy and measure the success of a real media plan.

Prerequisite(s): ADV 91 and BUS2 130.

Grading: Letter Graded

ADV 127 - Practical Qualitative Research in Advertising

3 unit(s)

Course will explore the kinds of questions to which qualitative research can provide answers, the roles & functions of researchers, the processes & tools used in developing, executing and presenting the results of a research project, the typical relationship between agency & client research departments. Students will explore how to respond to a research brief, develop & present a formal research proposal, execute a research project and present its findings, conclusions and proposed next steps.

Prerequisite(s): ADV 91, ADV 121.

Grading: Letter Graded.

ADV 128 - Integrated Marketing Communications (IMC)

3 unit(s)

Learn how advertising, public relations, promotions, and marketing all work together to achieve campaign objectives. Strategic planning, budgeting, research, tactics, evaluation, presentation skills and team building.

Prerequisite(s): Three ADV courses and BUS2 130.

Grading: Letter Graded

ADV 129 - Advertising Campaign Planning and Management

3 unit(s)

Capstone course in which students engage hands-on in the process and methods employed to develop a fully integrated advertising campaign based on the marketing objectives established by a real-world client.

Prerequisite(s): MCOM 111 or ADV 116.

Grading: Letter Graded

ADV 130 - Advertising Portfolio 1

3 unit(s)

Apply fundamentals of design thinking, teamwork, and various media methods to creating a body of advertising work in the form of a portfolio. Students work on a series of projects and award show briefs in creative teams.

Prerequisite(s): ADV 91, ADV 93, and ADV 94

Grading: Letter Graded

ADV 131 - Advertising Portfolio 2

3 unit(s)

Students enhance portfolios developed in Advertising Portfolio 1 with more award show work and live client projects. Each brief requires development of technical skills across media platforms and production of professional work.

Prerequisite(s): ADV 91, ADV 93, ADV 94, ADV 130

Grading: Letter Graded

ADV 132 - UX UI Design for Advertising

3 unit(s)

Human centered design process as it pertains to user interaction (UI) and user experience (UX) design. Students conduct basic user research to create personas that guide the development of content strategy, information architecture, feature sets, wireframes and annotations as they pertain to (1) large scale web development and (2) integrated campaign assignments that cover a wide range of interactive platforms.

Prerequisite(s): ADV 91, ADV 93, and ADV 94

Grading: Letter Graded

ADV 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Aerospace Engineering

AE 15 - Air & Space Flight: Past, Present, and Future

1 unit(s)

Introduction to the history, basic principles, current and future developments of the aerospace engineering field through projects, guest speakers and field trips.

Grading: Letter Graded

AE 20 - Computer-Aided Design for Aerospace Engineers

2 unit(s)

Introduction to the fundamentals of drafting and computer-aided design with applications in aircraft and spacecraft design.

Lecture 1 hour/Lab 3 hours

Grading: Letter Graded

AE 30 - Computer Programming for Aerospace Engineers

2 unit(s)

C language: Variables, data types, operators, functions, modular programming, input/output sequence, pointers and memory addressing, external libraries, dynamic memory allocation. MATLAB: Variables, scripts, operations, visualization, plotting and programming. Equation solving and curve fitting. Symbolics, Simulink and I/O building block.

Lecture 1 hour/Lab 3 hours

Grading: Letter Graded

AE 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

AE 100 - Fundamentals of Aerospace Engineering

3 unit(s)

Introduction to the fundamental disciplines and concepts of aerospace engineering and in particular of aerodynamics, aerospace structures, stability and control, propulsion, and flight mechanics.

Prerequisite(s): C or better in (MATH 30 or MATH 30X) and PHYS 50, or graduate standing.

Grading: Letter Graded

AE 105 - Mathematical Methods for Aerospace Engineers

3 unit(s)

This is a semester-long course designed for undergraduate and graduate students in Aerospace engineering, applied and computational mathematics, physical sciences, and related fields. The course delves into the fundamentals of a wide range of important topics in modern mathematics with emerging applications in Aerospace sciences and engineering. These topics are primarily derived from ordinary and partial differential equations, as well as applied linear algebra. The emphasis is on developing proficiency in both analytical and computational methods to solve physical systems in Aerospace engineering. To a lesser extent, the course will touch upon topics in statistics, probability theory, and uncertainty quantification.

Prerequisite(s): MATH 32 or MATH 32X.

Corequisite(s): MATH 33A.

Grading: Letter Graded.

AE 110 - Space Systems Engineering

3 unit(s)

Introduction to design, analysis and operation of spacecraft power, communications, attitude determination/control, structures, propulsion, thermal management systems. Typical payload systems design and operation, including remote Earth sensors. System integration issues. Lab experiments.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): C or better in AE 100 or AE 165, or graduate standing.

Grading: Letter Graded

AE 112 - Aerospace Structures and Materials I

4 unit(s)

Aircraft loads, V-n diagram; spacecraft boost loads. Free-body diagrams. 2-D force and moment equilibrium. Centroid and area moment of inertia. Internal loads diagrams (axial and shear forces, torsional and bending moments); cantilevered wings & internal support structures; stress/strain relationships; material properties, microstructure, and imperfections; material selection. Experimental strain measurement, experimental material properties testing.

Prerequisite(s): "C" or better in PHYS 50 and (MATH 31 or MATH 31X) or graduate standing.

Grading: Letter Graded.

AE 112W - AE Structural Analysis I Problem-Solving Workshop

1 unit(s)

Each workshop begins with a problem statement, coordinated with the material discussed in the AE 112 lectures. Students work alone but may ask the instructor for help. After each session, solutions are posted on Canvas.

Corequisite(s): AE 112.

Grading: Letter Graded

AE 114 - Aerospace Structures and Materials II

3 unit(s)

Aircraft, missile, spacecraft structural design and analysis. Static, elastic and stress analysis of structures.

Structural materials. Deflection analysis of structural systems. Conventional, stiffened, sandwich and composite structures. Structural dynamics. Thermal effects. Experimental stress measurements.

Prerequisite(s): C or better in AE 112 or graduate standing.

Grading: Letter Graded

AE 114W - AE Structural Analysis II Problem-Solving Workshop

1 unit(s)

Each workshop begins with a problem statement, coordinated with the material discussed in the AE 114 lectures. Students work alone but may ask the instructor for help. After each session, solutions are posted on Canvas.

Corequisite(s): AE 114.

Grading: Letter Graded

AE 119 - Finite Element Analysis for Aerospace Applications

3 unit(s)

Physical and mathematical foundations of the finite element method with emphasis on aerospace applications.

Topics include: static FEM for the analysis of flexible wings as 1D, 2D and 3D bodies, optimal mesh definition, introduction to modeling of damping and inertia loads, introduction to FEM modal and harmonic analyses for space systems based on launcher requirements. Applications using commercial FEA software packages for aerospace systems.

Prerequisite(s): AE 114 with C or better.

Grading: Letter graded.

AE 138 - Vector-Based Dynamics for Aerospace Applications

3 unit(s)

Vector mechanics of three degree-of-freedom particle motion. Particle kinematics, reference frames and rotational relative motion. Two degree-of-freedom rigid body motion, moments/products of inertia. Particle & rigid body equations of motion and numerical time histories.

Prerequisite(s): C or better in (MATH 32 or MATH 32X) and PHYS 50, or graduate standing.

Corequisite(s): AE 112.

Grading: Letter Graded

AE 138W - Vector-Based Dynamics Problem-Solving Workshop

1 unit(s)

Each workshop begins with a problem statement, coordinated with the material discussed in the AE 138 lectures. Students work alone but may ask the instructor for help. After each session, solutions are posted on Canvas.

Corequisite(s): AE 138.

Grading: Letter Graded

AE 140 - Rigid Body Dynamics

3 unit(s)

Coordinate frames and descriptions of absolute and relative motion. General equations of rotational motion for single and multibody systems in Euler and Lagrangian formulations. Elasticity and dissipation effects. Spinning body motions. Impulsive motions. Applications to aerospace vehicles.

Prerequisite(s): C or better in AE 138 or graduate standing.

Grading: Letter Graded

AE 140W - Rigid Body Dynamics Problem-Solving Workshop

1 unit(s)

Each workshop begins with a problem statement, coordinated with the material discussed in the AE 140 lectures. Students work alone but may ask the instructor for help. After each session, solutions are posted on Canvas.

Corequisite(s): AE 140.

Grading: Letter Graded

AE 142 - Astrodynamics

3 unit(s)

Two-body problem analysis and orbit design; Kepler's Laws; Single-impulse orbit transfers; Hohmann transfers; Circularization; Plane changes; Kepler's Equation; Planetary sphere of influence; Vector mechanics and relative motion of interplanetary flight; Patched conic trajectory model; Gravity-assist trajectories; Case studies; Restricted three-body problem.

Prerequisite(s): C or better in AE 138 or graduate standing.

Grading: Letter Graded

AE 149 - Advanced Dynamics and Simulation

3 unit(s)

Matlab scripting of Runge Kutta and Adams Bashforth Moulton numerical integration algorithms. Derivation of equations of motion with Lagrange's equations (with and without a potential energy). Power/energy rate principle. Kane's equations. Analytical derivation and simulation. Multi-body dynamics. Planar two and three-body astrodynamics. Quaternions. Matlab motion animation.

Prerequisite(s): C or better in AE 30 and AE 140, or graduate standing.

Grading: Letter Graded

AE 157 - Aerospace Automatic Control Systems Design

3 unit(s)

Modeling and analysis of aerospace feedback control systems. Stability analysis, root locus design, and frequency response methods for aerospace vehicles and associated automatic control systems. Nyquist/Bode diagrams. Lead-lag, PID compensator designs for aircraft and spacecraft.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): C or better in MATH 33A, AE 105, and AE 138, or graduate standing.

Grading: Letter Graded

AE 160 - Aerodynamics I

3 unit(s)

Introduction to incompressible, inviscid and viscous aerodynamics through problem solving, computer simulations, water and wind-tunnel experiments, films, and service learning. Topics include aerodynamic forces and moments, flow classification and similarity, conservation laws with applications in the calculation of lift and drag, and boundary layer theory with emphasis on calculation of skin friction and pressure drag.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): "C" or better in (MATH 31 or MATH 31X) and PHYS 50 or graduate standing.

Corequisite(s): ENGR 100W.

Grading: Letter Graded

AE 160W - Aerodynamics I Problem-Solving Workshop

1 unit(s)

Optional support course for AE 160, Aerodynamics I. Workshop content and activities are coordinated with material discussed in the AE 160 lecture.

Corequisite(s): AE 160.

Grading: Letter Graded

AE 162 - Aerodynamics II

3 unit(s)

Two-dimensional and three-dimensional, incompressible and compressible potential flow theory. Airfoil and wing theory for subsonic, supersonic, and hypersonic flows. Flow visualization in a water tunnel. Lift and drag measurements in a subsonic wind tunnel.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): C or better in ENGR 100W, MATH 33A and (AE 160 or ME 111), or graduate standing.

Grading: Letter Graded

AE 162W - Aerodynamics II Problem-Solving Workshop

1 unit(s)

Workshop to support aerodynamics material discussed in AE 162 lecture. Students work independently in the workshop with support from the instructor to solve and reflect on problems that are coordinated with the lecture topics.

Corequisite(s): AE 162.

Grading: Letter Graded

AE 164 - Aerothermodynamics

5 unit(s)

Thermodynamic laws. Shock and expansion waves with applications to supersonic airfoils and wings. Nozzle flow. Flow with heat addition and friction. Aerodynamic heating. Conduction, convection and radiative heat transfer.

Prerequisite(s): C or better in PHYS 52 and AE 160, or graduate standing.
Grading: Letter Graded

AE 164W - Aerothermodynamics Problem-Solving Workshop

1 unit(s)

Optional support course for AE 164, Aerothermodynamics. Workshop content and activities are coordinated with material discussed in the AE 164 lecture.

Corequisite(s): AE 164.
Grading: Letter Graded

AE 165 - Aerospace Flight Mechanics

3 unit(s)

Trajectory dynamics of atmospheric flight (aircraft and missiles) and spaceflight (orbital mechanics). Influence of vehicle design on trajectory. Aircraft static performance, stability and control. Rocket launch and re-entry dynamics. Computer simulations.

Prerequisite(s): C or better in (MATH 31 or MATH 31X) and PHYS 50, or graduate standing.
Grading: Letter Graded

AE 166 - Rocketry

3 unit(s)

Introduction to rocketry through theory, computer simulations, and development / launch of an amateur level rocket. Topics include basic principles of aerodynamics, vehicle structures, rocket propulsion, flight mechanics, avionics, as well as past and current launch vehicle technologies.

Seminar 2 hours/Lab 2 hours.

Prerequisite(s): C or better in AE 100 or AE 165.
Grading: Letter Graded

AE 167 - Aerospace Propulsion

3 unit(s)

Basic one-dimensional flows: isentropic, area change, heat addition. Overall performance characteristics of propellers, ramjets, turbojets, turbofans, rockets. Performance analysis of inlets, exhaust nozzles, compressors, burners, and turbines. Rocket flight performance, single-/multi-stage chemical rockets, liquid/solid propellants and design problems.

Prerequisite(s): C or better in AE 164, or graduate standing.
Grading: Letter Graded

AE 168 - Aerospace Vehicle Dynamics and Control

3 unit(s)

Aircraft/spacecraft dynamics, stability and control. Linearization and Euler transformations. Eigenvalues and eigenvectors. State space and transfer function analysis of dynamics of aerospace vehicles. Feedback

control design and synthesis using advanced control techniques.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): C or better in AE 140, AE 157, and AE 165, or graduate standing.

Grading: Letter Graded

AE 169 - Computational Fluid Dynamics

3 unit(s)

Physical and mathematical foundations of computational fluid mechanics with emphasis on applications. Solution methods for the advection, diffusion model equations, the Euler and the Navier-Stokes equations. The finite volume formulation of the equations. Classification of partial differential equations and solution techniques. Truncation errors, stability analysis.

Prerequisite(s): "C" or better in AE 105 and AE 160 or graduate standing. Mechanical Engineering majors may substitute ME 130 and ME 111 .

Grading: Letter Graded.

AE 171A - Aircraft Design I

3 unit(s)

First course in a two-semester sequence, in which students work in teams to complete the conceptual and preliminary design of an aircraft. Students are challenged to consider the relationship of aerospace engineering to the broader community.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Must be senior in good standing with C or better in AE 20, AE 162, AE 165, and ENGR 100W, or graduate standing. Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses.

Pre/Corequisite(s): AE 164, AE 168, and ENGR 195A.

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: AE 171B, ENGR 195A and ENGR 195B.

AE 171B - Aircraft Design II

3 unit(s)

Second course in a two-semester sequence, in which students work in teams to complete the conceptual and preliminary design of an aircraft. Students are challenged to consider the relationship of aerospace engineering to the broader community.

Satisfies SJSU Studies V: Cultures and Global Understanding (when taken with AE 171A, ENGR 195A, and ENGR 195B)

Prerequisite(s): C or better in AE 171A and ENGR 195A and senior in good standing, or graduate level standing.

Corequisite(s): ENGR 195B.

Grading: Letter Graded.

Note(s): Meets GE areas S and V when course is taken in combination with: AE 171A, ENGR 195A and ENGR 195B.

AE 172A - Spacecraft Design I

3 unit(s)

First course in a two-semester sequence in which students work in teams to complete the conceptual and preliminary design of a spacecraft. Students are challenged to consider the relationship of aerospace engineering to the broader community.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Must be senior in good standing with C or better in AE 20, AE 162, AE 165, ENGR 100W, or graduate standing. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses.

Pre/Corequisite(s): AE 164, AE 168, and ENGR 195A.

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: AE 172B, ENGR 195A and ENGR 195B.

AE 172B - Spacecraft Design II

3 unit(s)

Second course in a two-semester sequence, in which student teams complete the conceptual, preliminary, and detailed design of a spacecraft. Projects integrate general education (GE) student learning outcomes including the relationship of aerospace engineering to the broader community both in the U.S. and worldwide, ethics, safety and liability issues, as well as issues of culture, civilization and global understanding in relationship to aerospace engineering practice.

Satisfies SJSU Studies V: Cultures and Global Understanding (when taken with AE 172A, ENGR 195A, and ENGR 195B)

Prerequisite(s): "C" or better in AE 172A and ENGR 195A, Senior in good standing or Graduate standing.

Corequisite(s): ENGR 195B.

Grading: Letter Graded.

Note(s): Meets GE Areas S and V when course is taken in combination with: AE 172A, ENGR 195A and ENGR 195B.

AE 173 - Uncrewed Air Vehicle Design

3 unit(s)

Introduction of uncrewed aircraft systems (UAS) and relevant design and operation considerations. Vehicle dynamics and flight controls. UAS flight path planning and optimization. Computer simulations.

Prerequisite(s): C or better in AE 30 or graduate standing.

Corequisite(s): AE 168 or graduate standing.

Grading: Letter Graded

AE 180 - Individual Studies

1-3 unit(s)

Individual work on special topics. By arrangement.

Prerequisite(s): Upper division standing and instructor consent. Not available to Open University Students.

Grading: Letter Graded

AE 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

AE 199 - Special Topics in Aerospace Engineering

1-4 unit(s)

Special topics that are currently of interest to industry and academia. Content varies from semester to semester.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

AE 200 - Engineering Analysis of Aerospace Systems

3 unit(s)

Advanced engineering mathematics including linear algebra, Ordinary Differential Equations (ODEs), Fourier analysis, Partial Differential Equations (PDEs) and numerical methods with applications in Aerospace Engineering.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.

Grading: Letter Graded

AE 210 - Advanced Space Systems Engineering

3 unit(s)

Overview of the engineering process used in aerospace mission and system design spanning the entire system life cycle for the near-Earth and outer space environment. Effects of gravity field, temperature and radiation on physical systems and the human organism. Mission program inception, proposal development, cost analysis and risk management.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GVAR in this master's program.

AE 242 - Orbital Mechanics and Mission Design

3 unit(s)

Two-body problem, conic sections, time of flight. Gibb's method of orbit determination, maneuver analysis for Earth orbiters and interplanetary flight. Euler-Hill equations. Mission design constraints on orbit geometry and launch window analysis.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.

Grading: Letter Graded

AE 243 - Advanced Astrodynamics

3 unit(s)

Analysis of spacecraft motion using different dynamic models and perturbations. Use of the state transition matrix and differential corrections technique for trajectory computation. Orbit determination and station-keeping methods. Introduction to the three-body problem. Application of computational and analytic methods to solve astrodynamics problems.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.

Grading: Letter Graded

AE 245 - Spacecraft Dynamics and Control

3 unit(s)

Rigid body dynamics review. Attitude kinematical representations. Development and solution of general equations of motion. Single and dual-spin, zero and biased-momentum spacecraft. Control system design strategies. Common torquer elements. Computer simulations.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.

Grading: Letter Graded

AE 246 - Advanced Aircraft Stability and Control

3 unit(s)

Natural longitudinal and lateral/directional motion of aircraft; mode shapes, eigenvalues, eigenvectors. Analysis and synthesis of various aircraft autopilots using classical and state space formulations.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.

Grading: Letter Graded

AE 247 - Trajectory Optimization in Aerospace Applications

3 unit(s)

Formulation and solution of optimization problems in aerospace engineering. Parameter optimization, minima of functions and functionals, necessary conditions, calculus of variations, control formulation, two-point boundary-value problems. Primer vector theory. Applications to typical problems in aerospace engineering, such as optimal launch, minimum time to climb, maximum range, and optimal space trajectories.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.
Grading: Letter Graded

AE 250 - Advanced Structures and Materials

3 unit(s)

Design and analysis of modern flight structures including static and dynamic structural response; materials design including metals, alloys, composites. Introduction to modern computational methods including finite elements.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.
Grading: Letter Graded

AE 251 - Structural Vibrations for Aerospace Applications

3 unit(s)

Introduces the analysis of vibrations of very flexible bodies encountered as elements of aircraft wings and space structures. Topics include: free and forced vibrations of single- and multi-degree of freedom systems, simplified analysis of vibrations induced by flutter, free and forced vibrations of wings in bending and torsion, signal processing techniques for time-varying signals, forced and ground vibration testing of aerospace components, finite element analysis for wings and space structures, spacecraft and aircraft dynamic design loads.

Prerequisite(s): BS in Aerospace Engineering or BS in Mechanical Engineering or instructor consent.
Grading: Letter Graded

AE 262 - Advanced Aerodynamics

3 unit(s)

Thin airfoil theory. Prandtl's lifting-line theory. Subsonic and supersonic airfoil and wing theory. High-angle of attack aerodynamics. Boundary layer theory; Blasius and Falkner-Skan solutions, compressible boundary layers, turbulent flows, separation criteria.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.
Grading: Letter Graded

AE 264 - Gas Dynamics

3 unit(s)

Advanced topics in compressible flow theory with emphasis on the design of high subsonic, supersonic and hypersonic vehicles. In addition to classical compressible flow theory and problem solving, the course may include supersonic wind tunnel experiments and computer simulations.

Prerequisite(s): BS in Aerospace Engineering or BS in Mechanical Engineering or instructor consent.
Grading: Letter Graded

AE 265 - Boundary Layers

3 unit(s)

Boundary layer analysis on airfoils and aerodynamic surfaces: integral methods (Pohlhausen, Thwaites-

Walz). Self-similar solutions for laminar boundary layers: Blasius solution and Falkner-Skan flows. Explicit finite difference methods for the solution of incompressible, laminar boundary layers with and without external pressure gradients. Compressible, boundary layers: general solutions, self-similar solutions in supersonic and hypersonic flow regimes. Turbulent boundary layers: transition, universal law of the wall, turbulence models.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.

Grading: Letter Graded

AE 266 - Hypersonics

3 unit(s)

Fundamental principles of hypersonic aerodynamics. Development of important theory and techniques, discussion of salient results with emphasis on physical aspects, and presentation of modern thinking on the subject.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

AE 267 - Space Propulsion Systems

3 unit(s)

Rocket propulsion fundamentals. propulsion requirements for: multi-stage launch; orbit establishment, maneuvers and maintenance; spacecraft attitude control. Nozzle flow, thermochemical calculation of performance. Design and performance calculations for systems and components of chemical rockets (liquid, solid, hybrid), electric rockets and advanced concepts.

Prerequisite(s): BS in Aerospace Engineering or BS in Mechanical Engineering or instructor consent.

Grading: Letter Graded

AE 269 - Advanced Computational Fluid Dynamics

3 unit(s)

Advanced topics in computational fluid dynamics and numerical techniques to solve the Euler and Navier-Stokes equations. The student will use MatLAB, grid generation, CFD and visualization software for homework, and projects.

Seminar 2 hours/lab 3 hours.

Prerequisite(s): BS in Aerospace Engineering or BS in Mechanical Engineering or instructor consent.

Grading: Letter Graded

AE 271 - Advanced Aircraft Design

3 unit(s)

Project course in which students complete the preliminary design of an airplane of their choice. The design process involves defining the mission requirements, weight sizing, performance sizing, fuselage design, wing, high-lift system and lateral controls design, landing gear design, weight and balance, stability and control, drag polars, and final drawings. Final report includes discussion of environmental, economic and safety considerations for the airplane.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): BS in Aerospace Engineering or BS in Mechanical Engineering or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

AE 273 - Aircraft Subsystems

3 unit(s)

Aircraft subsystem analysis and design: flight controls; avionics and electrical systems; cabin systems; landing gear and other mechanical systems; systems safety analysis.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): BS in Aerospace Engineering or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

AE 295A - Aerospace Engineering Masters Project I

3 unit(s)

This is a first-semester aerospace engineering Master's Project supervision course. Students perform original, graduate level research or design or development, involving aerospace systems under the supervision of an aerospace engineering faculty member or engineers from NASA / aerospace industry.

Prerequisite(s): Advancement to candidacy for the master's degree and a written proposal approved by the instructor and the Graduate Coordinator. Not available to Open University Students.

Grading: Letter Graded/Incomplete.

AE 295B - Aerospace Engineering Masters Project II

3 unit(s)

This is a second-semester aerospace engineering Master's Project supervision course, following AE295A. Students perform original, graduate level research and/or design and/or development, involving aerospace systems or subsystems under the supervision of an aerospace engineering faculty member and/or engineers from NASA / aerospace industry.

Prerequisite(s): "B" or better in AE 295A.

Grading: Letter Graded/RP.

AE 297 - Special Topics in Aerospace Engineering

1-4 unit(s)

Special topics that are currently of interest to industry and academia. Content varies from semester to semester. Repeatable for up to six units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Graduate Standing or instructor consent

Grading: Letter Graded

AE 298 - Special Projects in Aerospace Engineering

1-3 unit(s)

Advanced individual work in Aerospace Engineering.

Repeatable for credit.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit/RP.

AE 299 - Aerospace Engineering Masters Thesis

3 unit(s)

Master's thesis work in aerospace engineering.

Prerequisite(s): "CR" in 1st semester to continue in 2nd semester.

Grading: Mandatory Credit/No Credit/RP

AE 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project beyond minimum required units, for cases in which final deliverables are still in progress.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): RP grade in a preceding thesis or project semester.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Aerospace Studies

AS 1A - Heritage and Values

1 unit(s)

Introduces students to the Department of the Air Force (DAF) and provides an overview of the basic characteristics, missions, communications and organization of the Air and Space Forces.

Grading: Letter Graded

Note(s): Year course. Enrollment in leadership lab required.

AS 1B - Heritage and Values

1 unit(s)

Introduces students to the Department of the Air Force (DAF) and provides an overview of the basic

characteristics, missions, communications and organization of the Air and Space Forces.

Grading: Letter Graded

Note(s): Year course. Enrollment in leadership lab required.

AS 2A - Team Leadership Fundamentals

1 unit(s)

Provides a fundamental understanding of both leadership and team building, including aspects such as listening, understanding themselves, being a good follower and problem solving efficiently. Students apply these leadership perspectives when completing team building activities and discussing issues like conflict management. Students should demonstrate basic verbal and written communication skills. Cadets apply these lessons at Field Training.

Grading: Letter Graded

AS 2B - Team Leadership Fundamentals

1 unit(s)

Provides a fundamental understanding of both leadership and team building, including aspects such as listening, understanding themselves, being a good follower and problem solving efficiently. Students apply these leadership perspectives when completing team building activities and discussing issues like conflict management. Students should demonstrate basic verbal and written communication skills. Cadets apply these lessons at Field Training.

Grading: Letter Graded

AS 131A - Leading People and Effective Communication

3 unit(s)

Utilizes student's field training experience to take a more in-depth look at leadership. Special emphasis is placed on enhancing communication skills and why that is important as a leader. Students practice these leadership and management techniques in a supervised environment.

Prerequisite(s): AS 1A and AS 1B, AS 2A and AS 2B, or as determined by department chair.

Grading: Letter Graded

Note(s): Year course. Enrollment in Leadership lab required.

AS 131B - Leading People and Effective Communication

3 unit(s)

Utilizes student's field training experience to take a more in-depth look at leadership. Special emphasis is placed on enhancing communication skills and why that is important as a leader. Students practice these leadership and management techniques in a supervised environment.

Prerequisite(s): AS 1A and AS 1B, AS 2A and AS 2B, or as determined by department chair.

Grading: Letter Graded

Note(s): Year course. Enrollment in Leadership lab required.

AS 141A - National Security, Leadership & Commissioning Prep

3 unit(s)

Provides students with the foundation to understand their role as military officers and how they are directly tied to our National Security Strategy. Provides an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level.

Pre/Corequisite(s): AS 131A.

Grading: Letter Graded

Note(s): Enrollment in leadership lab required.

AS 141B - National Security, Leadership & Commissioning Prep

3 unit(s)

Provides students with the foundation to understand their role as military officers and how they are directly tied to our National Security Strategy. Provides an overview of the complex social and political issues facing the military profession and requires a measure of sophistication commensurate with the senior college level.

Pre/Corequisite(s): AS 131B.

Grading: Letter Graded

Note(s): Enrollment in leadership lab required.

American Studies

AMS 1A - American Cultures to 1877

6 unit(s)

American culture examined through political, literary, artistic, economic and social development. American values, ideas and institutions from popular culture as well as traditional sources.

Lecture 3 hours/lecture 3 hours

Satisfies C1 + D: Arts and Social Sciences.

Grading: Letter Graded.

Note(s): Entire sequence satisfies GE Areas C1+C2+D+American Institutions (US123).

AMS 1B - American Cultures 1877 to Present

6 unit(s)

American culture examined through political, literary, artistic, economic and social development. American values, ideas and institutions from popular culture as well as traditional sources.

Lecture 3 hours/lecture 3 hours.

Satisfies C2 + D + US123: Humanities + Social Sciences + American Institutions.

Prerequisite(s): AMS 1A.

Grading: Letter Graded.

Note(s): Entire sequence satisfies GE Areas C1+C2+D+American Institutions (US123).

AMS 10 - Stories that Make America

3 unit(s)

Introduces students to the political and historical origins of the U.S., as well as the ways these origins have been mythologized and reimagined in literature and social constructions of public memory. Along with studying primary source documents and archives within their historical context, students learn to analyze literature, popular culture, and public discourse to better understand the uses and misuses of historical memory. Focuses on a 100+ year span of history.

Satisfies C2: Humanities + US1: US History. When taken with AMS 11, completes the US1 + US2 + US3 (American Institutions) requirements.

Pre/Corequisite(s): Completion of, or co-registration in, ENGL 1A is required.

Grading: Letter Graded

AMS 11 - Visions of Democracy

3 unit(s)

Foregrounds social movements as a way to understand the impact of the U.S. government and the State of California on their residents. Focus on how both the U.S. and California governments work, how they are interrelated, and how groups of Americans have responded to their experiences of injustice and the failures of democracy through art, literature, social action, and politics.

When taken with AMS 10, completes the American Institutions requirements (US1, US2, and US3).

Satisfies D: Social Sciences + US2: US Constitution + US3: California Government.

Grading: Letter graded.

AMS 12 - Intro to US Popular Culture: Serious Fun!

3 unit(s)

Focuses on the relationships among power, representation, audience, historical context, and genre in American popular culture through the study of aesthetics, representation, visual technology, and public discourse. Develops a foundational understanding of the histories, practices, and aesthetic strategies that have shaped popular culture in the U.S., and explores the intersections of gender, race, class, sexuality, colonialism, im/migration, and community identity that shape its production and consumption, as well as its potential as a platform for social change.

Satisfies C1: Arts.

Grading: Letter graded.

AMS 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

AMS 100W - Writing in the Humanities & Interdisciplinary Arts

3 unit(s)

Advanced workshop in composition and reading for the critical and comparative study of the humanities and interdisciplinary arts. Students explore and practice the thinking and writing skills that help us communicate insight, critique, interpretation, description, and analysis of arts, literature, history, and culture, including expository writing and library research. Readings and objects of study include a range of topics and at least two different art forms.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second-semester composition course (with a grade of C- or better); completion of core GE; and upper-division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

Cross-listed with HUM 100W / RELS 100W. Humanities is responsible for scheduling.

AMS 129 - The U.S. in a Global Context

3 unit(s)

The United States has been interconnected with and part of a larger Western hemisphere, as well as part of global political, economic, ecological, and cultural networks, from the times of European colonization to the present. This course explores the ways that Indigenous American and U.S. cultures, peoples, and institutions have been globally interconnected. To explore these connections and links, students will analyze a range of texts, artifacts, works of art, etc., from around the world. Topics may include foreign policy, colonization & decolonization, immigration, mercantilism and global capitalism, consumerism, propaganda, mass culture, warfare, environmental colonialism, etc.

Prerequisite(s): Upper division standing

Grading: Letter Graded

AMS 139 - Animals and Society

3 unit(s)

Introduction to the practices of animal observation and the critical methods of the interdisciplinary field of Human-Animal Studies, paying particular attention to intersections among behavior, ecology, space, and critical theories of race, class, gender, colonialism, and power. To engage more deeply with the scientific methods and cultural theories that underpin this course, students engage in field observations and read texts from ethology (the study of animal behavior), evolutionary biology, ecological theory, history,

philosophy, literature, and cultural studies.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

AMS 159 - Nature and World Cultures

3 unit(s)

The influence of industrialization and globalization on earth and the environment as seen through culture.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENVS 159 / HUM 159. Humanities is responsible for scheduling.

Sustainability Focused - SDG 15: Life on Land

AMS 160 - Special Topics in Humanities

3 unit(s)

Comparative studies of vital issues and enduring ideas (ethical, political, social, cross-cultural, etc.). Content varies each semester and with each instructor. Repeatable for up to 9 units of credit when course topic changes.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Upper-division Standing.

Grading: Letter Graded

Cross-listed with HUM 160. Humanities is responsible for scheduling.

AMS 169 - The American Dream

3 unit(s)

The American search for identity and meaning, the struggle for equality and success, in relation to myths, illusions and realities reflected in history, literature and the arts.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with HUM 169. Humanities is responsible for scheduling.

AMS 179 - Issues in US Popular Culture

3 unit(s)

Explores a specific genre of popular culture (e.g., fantasy, romance, westerns, etc.), form (e.g., comics, sports, television, pop music, dime novels, etc.), time period (e.g., the 1960s), or social issue (race, class, immigration, globalization, etc.). Through this in-depth study, we illuminate the interaction between American culture industries and U.S. society and cultures at large.

May be repeated for credit when content changes for up to 6 units.

Prerequisite(s): Upper-division standing.

Grading: Letter Graded

Cross-listed with HUM 179. Humanities is responsible for scheduling.

AMS 180 - Individual Studies

1-4 unit(s)

Supervised study of a particular aspect of American culture not covered in a regular course offering.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

AMS 190 - Senior Seminar in Humanities

3 unit(s)

Readings, discussions and individual research projects relating to an interdisciplinary theme selected by the instructor.

Pre/Corequisite(s): Upper-division Standing. Any 100W class.

Grading: Letter Graded.

Cross-listed with HUM 190 / RELS 190. Humanities is responsible for scheduling.

AMS 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

African American Studies

AFAM 2A - African Americans and the Development of America's History and Government

3 unit(s)

Major events in America's development, emphasizing African Americans' relationship to government and other basic institutions.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Note(s): Must complete the entire sequence (AFAM 2A and AFAM 2B) to satisfy American Institutions (US123).

AFAM 2B - African Americans and the Development of America's History and Government

3 unit(s)

Major events in America's development, emphasizing African-Americans' relationship to government and other basic institutions.

Satisfies D + US123: Social Sciences and American Institutions.

Prerequisite(s): AFAM 2A.

Grading: Letter Graded.

Note(s): Must complete the entire sequence (AFAM 2A and 2B) to satisfy American Institutions (US123).

AFAM 22 - The Humanities in African American Culture

3 unit(s)

Analysis of several of the most important African American creative art forms and personalities. Special attention to Black contributions in music, literature, cinema, photography and painting.

Satisfies F: Ethnic Studies.

Grading: Letter Graded

AFAM 25 - The Changing Majority: Power and Ethnicity in America

3 unit(s)

Comparative and historical analysis of racial minorities. Focus on Euro American response to American Indians, Asian Americans, African Americans and Mexican Americans to provide understanding of minority experience in the U.S. as well as American culture.

Satisfies F: Ethnic Studies.

Grading: Letter Graded

Cross-listed with AAS 25 / CCS 25. Chicana Chicano Studies is responsible for scheduling.
Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

AFAM 40 - African Origins

3 unit(s)

Ancient African civilizations to the advent of the slave trade. Folklore and mythology manifested in ceremonies, rituals and rhythmic movements are examined.

Grading: Letter Graded

AFAM 100W - Writing Workshop

3 unit(s)

Development of advanced writing skills through study of principal techniques of communication in the Black community related to Black music, literature and politics.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

AFAM 102 - Black Music

3 unit(s)

Analysis of styles and techniques of major traditions in Black music. Development of music from slave work-a-day songs to rhythm and blues and modern jazz, 1950's to the present.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

AFAM 105 - Race and Health Inequities in the US

3 unit(s)

A review of the health and health-related issues of Blacks/African Americans within the U.S.. Major disease health trends are discussed as by-products of the interaction of biological, cultural, economic and social forces in the U.S.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

AFAM 106 - Black Diasporas

3 unit(s)

Examination of the role of race and ethnicity amongst persons of African descent i.e., the role race and ethnicity plays in primary and secondary relationships amongst Blacks and between Black and non-Black peoples.

Grading: Letter Graded

AFAM 110 - Race and Education in the US

3 unit(s)

Analysis of economic, sociocultural and educational issues that affect Black students. Emphasis directed at elementary and secondary school systems.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

AFAM 111 - African Nations: History, Politics, and Culture

3 unit(s)

Examination, exploration, and analysis of societies, history, and culture of nations on the African continent over time.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

AFAM 112 - Black Immigrant Communities

3 unit(s)

An overview of Black immigrants from the African continent in the United States from 1970 to the present.

Grading: Letter Graded

AFAM 115 - The Great Migration and Black Communities

3 unit(s)

Analysis of historical development of African-Americans including migrational trends of Blacks from the rural South to urban North. Search for alternatives in new institutions and modification of old ones.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

AFAM 119 - Africana Philosophy and Culture

3 unit(s)

Philosophical examination of the ideological roots of social movements in black diaspora cultures from Be-Bop to Hip-Hop.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with PHIL 119. Philosophy is responsible for scheduling.

AFAM 120 - Sociology of Black Communities

3 unit(s)

Sociological analysis of the African American community traces development of the community from its historical inception to contemporary urban settings. Analyzes important trends, shifting values, institutional development and urban problems. Also examines how patriarchy, race, and class shape African Americans in their everyday lives in American society.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

AFAM 125 - Black Kinship in the US - Black Families Past and Present

3 unit(s)

Sociological analysis of the Black family from its African roots to twenty-first century types. Influence of the American experience and the African American relationship practices

Prerequisite(s): Upper division standing.

Grading: Letter Graded

AFAM 130 - Black Perspectives in Psychology - Black Psychology

3 unit(s)

Impact of Black society and culture on personality growth in light of current sociological and social-psychological studies. Social interaction, group membership within the Black community and its influence on the shaping of behavior.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

AFAM 133 - Introduction to Social Issues in Planning

4 unit(s)

Contemporary social issues related to urban and regional planning. Assessment of community social needs and resident planning. Focus on ethnic areas such as African, Asian and Mexican American neighborhoods.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 133 Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

AFAM 134 - The Black Civil Rights Movements

3 unit(s)

Origins and development of the Civil Rights movement from 1865 to present. Analysis of the role of Martin L. King. Examines how political, social, economic, and cultural issues have shaped both American and African American life in terms of race relations in the United States in relationship to the origins and development of the Civil Rights movement since the Reconstruction era (1865-77).

Satisfies F: Ethnic Studies.

Grading: Letter Graded

Note(s): While this course is open to all undergraduate students including freshmen, this is an upper division course best suited for sophomore, junior or senior level students.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

AFAM 137 - Introduction to Black Religion

3 unit(s)

Analysis of formation and development of African American religious ideas and institutions (i.e., Christianity, Islam, Judaism) in the Black community and their effect on the African American personality.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with RELS 137. African American Studies is responsible for scheduling.

AFAM 142 - Race, Justice, and the Legal System

3 unit(s)

Analysis of the politics of law and race in the U.S. with a focus on the experience of African-Americans and other racial and ethnic minorities as offenders, victims and as citizens engaged in a continuing movement for equality and an end to injustice.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

AFAM 145 - Race, Policy, and Urban Cities

4 unit(s)

Effects of public policy decisions on inner city populations. Implications of urban planning processes for differential consumption costs of public goods and services.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with URBP 145. African American Studies is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

AFAM 151 - Race, Class and the Environment

3 unit(s)

Analysis of the relationship between the environmental crisis and people of color and poor communities in the U.S., emphasizing the interplay among race/ethnicity, class and politics in the struggle for environmental justice and survival by communities of color and poor people.

Satisfies SJSU Studies Area R. Earth, Environment & Sustainability

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): This course must be passed with a C- or better to satisfy the CSU graduation requirement.

Cross-listed with ENVS 151. African American Studies is responsible for scheduling.
Sustainability Focused - SDG 10: Reduced Inequalities

AFAM 152 - Black Feminisms

3 unit(s)

Exploration of the social, historical, and cultural factors influencing the Black women in U.S. society.

Satisfies SJSU Studies Area S - Self, Society & Equality in the U.S

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Sustainability Focused - SDG 5: Gender Equality

AFAM 155A - Triumphs and Trials of the Black Athlete in the U.S., 1850-1999

3 unit(s)

Examines the significance and impact of Black athletes on popular culture, race relations and historical and social movements in the U.S. and abroad from 1850 - 1999.

Grading: Letter Graded

AFAM 155B - Triumphs and Trials of the Black Athlete in the U.S., 2000-Present

3 unit(s)

Examines the significance and impact of Black athletes on popular culture, race relations and historical and social movements in the U.S. and abroad from 2000 - Present.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

AFAM 156 - Black Women's Writing

3 unit(s)

Comparative analysis of the meaning and developmental stages of womanhood for women of African ancestry as depicted in the fiction of women of African ancestry. Emphasis on the role of race and culture in shaping contemporary conceptions of womanhood among Black women.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ENGL 156 / WGSS 156. African American Studies is responsible for scheduling.
Sustainability Related - SDG 10: Reduced Inequalities

AFAM 157 - Race, Tech, and Global Futures

3 unit(s)

Examines the impact of globalization and technology on youth worldwide from the perspective of youth in different cultures and countries. Topics vary and focus on specific countries. Some sessions are faculty-led international programs.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

AFAM 158 - Race, Sport, Activism & Social Movements

3 unit(s)

Examines the significance and impact of Black sport activism, social movements, and liberation & freedom efforts.

Satisfies F: Ethnic Studies.

Grading: Letter Graded

Note(s): A grade of C- (1.7) or better is required to satisfy GE Area F. While this course is open to all undergraduate students including freshmen, this is an upper division course best suited for sophomore, junior or senior level students.

AFAM 159 - The Racial Wealth Gap in America

3 unit(s)

Analysis of continuing racial economic disadvantage in context of corporate and public policies. Exploration of new economic development and career opportunities emerging from changed environmental protection priorities.

Satisfies SJSU Studies Area S - Self, Society & Equality in the U.S

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): Upper division standing or instructor consent. Course must be passed with a C- or better to satisfy the CSU graduation requirement.

Sustainability Focused - SDG 8: Decent Work and Economic Growth

AFAM 160 - Black Political Power in the US

3 unit(s)

Examines the lives and major contributions of African-Americans to politics and U.S. society.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

AFAM 161 - Black Representations in Media and New Technology

3 unit(s)

Examination of the representation of Black people in film, TV, and traditional and social media as well as new/alternative technological informational sources.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

AFAM 162 - The Aesthetics of Hip-Hop

3 unit(s)

Exploration of the interrelated art forms that comprise hip hop, a culture conceived by African American, Afro-Caribbean and Latinx youth in the South Bronx in the 1970s, including hip hop culture's aesthetic strategies through a survey history of its four elements and tracing their wide influence in music, visual culture, dance, theatre and politics.

Satisfies F: Ethnic Studies.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): While this course is open to all undergraduate students including freshmen, this is an upper division course best suited for sophomore, junior or senior level students.

AFAM 164 - Black Entrepreneurship

3 unit(s)

Private sector businesses from the perspective of racial ownership and consumption patterns. Historical development, future trends, consumer market, government regulations and funding support as they impact the success of Black business.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

AFAM 165 - Topics in Ethnic American Literature

4 unit(s)

Focused study of a topic in ethnic American Literature, such as African American, Asian American, Latino American, or ethnic autobiography. Topics change; check schedule of classes for current offering.

Course may be repeated for credit for a total of 8 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ENGL 165. English and Comparative Literature is responsible for scheduling.

AFAM 166 - Black Women's Histories

3 unit(s)

Role of African American women in shaping U.S. history through a shared afrocentric gender legacy of activism and public life guardianship. Resulting impacts on abolition, lynching deterrence, labor unions, civil rights and professional activities.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

AFAM 170 - Interracial Intimacies and Mixed Race Identity in the U.S.

3 unit(s)

Course introduces students to the complex histories, experiences, political influences, and cultural productions of mixed race people, their families, and the communities and society that defined them. Using texts, art, objects, video, and films, students will explore changing social attitudes towards interracial sex and marriage and mixed race identity in the U.S. while also considering the impact of policies, judicial decisions, and legislative acts regarding the social status of mixed race people from colonization and slavery to the contemporary moment.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): Course must be passed with a C- or better to satisfy the CSU graduation requirement.

AFAM 180 - Individual Studies

1-4 unit(s)

Individual research project and field activity on phase or topic not covered in regular course offerings.

Prerequisite(s): Upper division standing.

Grading: Credit/No Credit

AFAM 184 - Directed Reading

1-4 unit(s)

Limited to qualified upper division students.

Prerequisite(s): Upper division standing.

Grading: Credit/No Credit

AFAM 185 - Special Topics in African American Studies

3 unit(s)

Special Topics in African American Studies. Topics vary and will be announced each semester. Repeatable for credit under different subtitles.

Course is repeatable for degree credit 3 times for a total of 9 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

AFAM 190 - Internship in Community Development

1-4 unit(s)

Supervised placement in practical situations where community workers are employed: community planning, correctional services, community development agencies, etc.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Credit/No Credit

Sustainability Focused - SDG 11: Sustainable Cities and Communities

AFAM 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

AFAM 198 - Senior Seminar in African American Studies

3 unit(s)

Major themes and topics in the African American experience analyzed through readings, reports and discussions. Topics and materials vary each semester. Course is repeatable for 6 unit maximum.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): AFAM 2A, AFAM 2B and senior standing.

Grading: Letter Graded

AFAM 298 - Special Studies

1-6 unit(s)

Advanced individual research and projects related to the Black community.

Prerequisite(s): Consent of graduate advisor.

Grading: Credit/No Credit/RP.

AFRS 142 - African Politics

4 unit(s)

Basic concepts, theoretical perspectives, and information to understand the evolution of contemporary African states. Begins with a study of colonialism, and proceeds to nationalism, personalistic and military rule, development, democratization, and inter-state and civil war.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with POLS 142. Political Science is responsible for scheduling.

AFRS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

History is responsible for scheduling.

Animation

ANI 1A - Animation Foundations Bridge 1A

3 unit(s)

Supplemental foundational skills for transfer students with introductory drawing techniques. Topics include rendering in analog media; rendering surfaces and textures; linear perspective; physics of spatial geometry and illumination; professional conduct, ideation and reference techniques.

Activity 6 hours.

Grading: Letter graded.

ANI 1B - Animation Foundations Bridge 1B

3 unit(s)

Supplemental foundational animation skills for transfer students with introductory drawing techniques. Topics include linear and tonal drawing; introduction to gesture; shape-based drawing; photo referencing; and observational drawing.

Activity 6 hours.

Grading: Letter graded.

ANI 10 - Light and Optics

3 unit(s)

An investigation into the physical properties of light and optics relevant to the visualization of artwork for the screen arts industry.

Prerequisite(s): BFA Animation/Illustration majors only

Grading: Letter Graded

ANI 11 - Illustration Fundamentals I

3 unit(s)

Basic principles of animation and illustration stressing composition, sequential visual storytelling, value drawing and other visual art techniques utilized by professionals in the screen arts industry.

Prerequisite(s): BA Design Studies or BFA Animation/Illustration majors only

Grading: Letter Graded

ANI 13 - Drawing for Animation/Illustration I

3 unit(s)

Principles of drawing for illustration and animation: gesture, construction, anatomy and technique. An intensive study of the human figure from life, and its use in working in animation and the screen arts industry.

Prerequisite(s): ANI 11. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 15 - Visual Storytelling

3 unit(s)

Basic principles of animation and illustration stressing composition, sequential visual storytelling, value drawing and other visual art techniques utilized by professionals in the screen arts industry.

Prerequisite(s): ANI 10 and ANI 11. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 21 - Color Principles for Screen Arts

3 unit(s)

Exploration of basic illustration problems involving studies in color, light, painting technique, and their application to color scripting in the screen arts industry.

Misc/Activity: 6 hours activity

Prerequisite(s): Allowed declared Animation major only Note: ANI 21 (formerly ANI 14) is treated as a repeat for students who have taken ART 14.

Grading: Letter Graded

ANI 31 - 2D Animation I

3 unit(s)

Introduction to the basic elements of animation and representation. Included are motion and animation exercises to understand mass movement through space, and reaction to external forces.

Prerequisite(s): Allowed Declared Majors: Animation/Illustration or Design Studies.

Grading: Letter Graded

ANI 41 - Introduction to 3D Modeling

3 unit(s)

Emphasis is on generating an in-depth understanding of digital media using commercial 2-D and 3-D software. Students are introduced to the underlying mathematical and conceptual processes of computer graphics.

Prerequisite(s): ANI 11 and BFA Animation/Illustration major only

Grading: Letter Graded

ANI 61 - Introduction to 3D Animation

3 unit(s)

Basic concepts and professional practices used in 3D computer animation. Application of traditional principles of animation to the 3D digital environment.

Prerequisite(s): BFA Animation/Illustration majors only

Grading: Letter Graded

ANI 71 - Visual Principles

3 unit(s)

Presents concepts of 2D design as they apply to the creation of sequential narrative imagery for the screen arts.

Prerequisite(s): BFA Animation/Illustration Majors only

Grading: Letter Graded

ANI 111 - Drawing for Animation/Illustration II

3 unit(s)

Principles of drawing for illustration and animation: gesture, construction, anatomy and technique. An intensive study of the human figure from life, and its use in working in animation and the screen arts industry.

Prerequisite(s): ANI 13. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 112 - Conceptual Illustration

3 unit(s)

Advanced course in illustration professionalism, stressing individual responses to assignments that typify those expected of freelance illustration providers. Emphasis on individual expression and development of personal direction.

Prerequisite(s): ANI 122 and passage of Mid-Program Review. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 121 - Illustration Fundamentals II

3 unit(s)

Exploration of basic illustration problems involving studies in color, light, painting technique, and their application to the screen arts industry.

Prerequisite(s): ANI 21, BFA Animation/Illustration Major

Grading: Letter Graded

ANI 122 - Illustration Fundamentals III

3 unit(s)

Completion of a complex painting incorporating knowledge of drawing principles, construction, composition, value and technique.

Misc/Lab: Activity 6 hours.

Prerequisite(s): ANI 121; Allowed declared Animation major only

Grading: Letter Graded

ANI 123 - Visual Development I

3 unit(s)

Narrative problems for illustrative assignments, professional processes and technical accomplishment. Studio course that examines advanced principles of illustration and their practical application in contemporary visual communication and design.

Activity 6 hours.

Prerequisite(s): ANI 121; Allowed Declared Majors: Animation.

Grading: Letter Graded

ANI 124 - Visual Development II

3 unit(s)

Advanced visual development projects with emphasis on attaining professional standards. Explores experimentation with the exaggeration and abstraction of realistic imagery to realize new, stylized imagery.

Misc/Activity: 6 hours activity

Prerequisite(s): ANI 123; Allowed Declared Majors: Animation

Grading: Letter Graded

ANI 131 - 2D Animation II

3 unit(s)

Fundamentals of 2D animation involving the completion of a series of basic exercises in motion, action analysis and kinetics.

Misc/Lab: Activity 6 hours.

Prerequisite(s): ANI 31, Passage of Mid-Program Portfolio Review; Allowed declared Animation major only

Grading: Letter Graded

ANI 132 - 2D Animation III

3 unit(s)

Demonstrate understanding of 2D animation principles through the completion of a series of advanced exercises in motion study, action analysis, pre-production, and narrative development; culminating in the completion of a short, animated film.

Prerequisite(s): ANI 131. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 133 - Animation Production - Storyboarding

3 unit(s)

Special problems in animation studies: storyboarding, sequential visual narrative, film making, professional practices and portfolio preparation.

Pre/Corequisite(s): ANI 132. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 134 - Animation Production - Storyboarding II

3 unit(s)

Advanced concepts of storyboarding, sequential visual narrative, film making, editing, and professional practices; principles necessary to put advanced animation skills into practical application.

Activity 6 hours

Prerequisite(s): ANI 133

Grading: Letter Graded

ANI 141 - Digital Modeling I

3 unit(s)

Intermediate level 3D digital modeling techniques using current industry standard software for the creation of 3D digital models. Introduction to the concept of production pipelines, with focus on modeling.

Prerequisite(s): ANI 41. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 142 - Digital Modeling II

3 unit(s)

Advanced level 3D digital modeling techniques using current industry standard software for the creation of 3D digital models. Students re-investigate the character pipeline with focus on human characters with complicated costuming and accessories.

Prerequisite(s): ANI 141. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 161 - Digital Animation I

3 unit(s)

Creation of believable movement by applying the traditional principles of animation to 3D digital characters, focusing on body mechanics, with emphasis on the building blocks of an animated scene, and the work flow from planning phase to final animation.

Prerequisite(s): ANI 61 and Passage of Mid-Program Portfolio Review. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 162 - Digital Animation II

3 unit(s)

Application of the traditional principles of animation for intermediate level 3D character animation, with focus on arcs, overlapping action, spacing, squash and stretch, strong posing and silhouette. In terms of workflow, the emphasis is on achieving a strong blocking more efficiently, and on techniques for polishing the animation.

Prerequisite(s): ANI 161. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 175 - Professional Practices in Entertainment Design

3 unit(s)

Current professional practices in the field of Entertainment Design. Technically and conceptually sophisticated projects foster a deeper understanding of narrative, stylization, individual point of view, acting and character, through hands-on creative work, class critiques and discussions.

Activity 6 hours.

Course repeatable for up to 6 units only when the topic of the course changes.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

ANI 179 - Special Topics in Animation/Illustration

3 unit(s)

Special Topics in Animation and Illustration.

Activity 6 hours.

Repeatable when topic changes for up to 12 units.

Prerequisite(s): Instructor Consent, and Passage of Mid-Program Portfolio Review. Allowed Declared Majors: Animation/Illustration.

Grading: Letter Graded

ANI 180 - Individual Studies

3-6 unit(s)

Special topics or projects by arrangement with instructor

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper-division standing in Animation/Illustration; Allowed declared Animation major only

Grading: Credit/No Credit

ANI 192 - International Program Studies

1-9 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ANI 198 - Senior Seminar Animation/Illustration

3 unit(s)

The first in a two-course sequence that constitutes the capstone for the BFA degree in Animation/Illustration. Students undertake the necessary research to prepare for project in the second course in the sequence.

Activity 6 hours.

Prerequisite(s): ANI 134 or ANI 142 or ANI 175; Allowed declared majors: Animation.

Grading: Letter Graded

ANI 199 - Senior Project Animation/Illustration

3 unit(s)

A project demonstrating professional competence in area of concentration. A gallery exhibition with the approval of the student's advisory committee is required.

Misc/Activity: 6 hours activity

Prerequisite(s): ANI 198; Allowed declared Animation major only

Grading: Letter Graded

ANI 240 - Visual Narratives

2 unit(s)

Visual narrative and story structure as it pertains to different mediums, such as animated television series, feature films, short films, and interactive media, such as games, AR, and VR. Addresses the principles governing each type of visual narrative and challenges/concerns for developing stories for different mediums.

Course is repeatable for up to 4 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

ANI 250 - Intellectual Property

2 unit(s)

Examines topics related to intellectual property and copyright law. Students will learn practical considerations of developing intellectual property for projects such as games, TV series, film, VR, and AR, and will have hands-on practice on formatting and pitching their own original IP during this course.

Course is repeatable for up to 4 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

ANI 255 - Sound Landscapes

2 unit(s)

Introduction to the tools and techniques used to create music and sound for games, films, or other media with a narrative component. Subject areas covered include: DAWs, MIDI, music theory, working with loops, and synthesis with samplers. Students will build simple soundtracks using industry standard tools. Knowledge of music and musical instruments are beneficial, but no experience is necessary.

Course is repeatable for up to 4 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

ANI 257 - New Technologies Studio

4 unit(s)

Explores the intersection of animation and computational design. Current emerging technologies will be employed with the goal of bringing interactive experiences into the realm of narrative based animation.

Course is repeatable for up to 8 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

ANI 258 - Interactive Studio

2 unit(s)

Advanced tools and techniques necessary for the creation of interactive games, films, or other media with a narrative component. Students will learn and apply techniques from coding, modeling, and animation to build an interactive project.

Course is repeatable for up to 4 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

ANI 259 - Post Production Techniques

2 unit(s)

Focuses on digital post-production, applying the latest software and techniques of the computer graphics entertainment industry, as used in the production of games, TV, films, and special effects.

Course is repeatable for up to 4 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

ANI 260 - The Synthetic Image

2 unit(s)

Digital lighting and imagery, from the classic three-point lighting concept (used in photography) to advanced digital techniques such as global illumination, subsurface scattering, and caustics.

Course is repeatable for up to 4 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

ANI 265 - Visual Styles for Animation

2 unit(s)

Focuses on the development of a complete visual language in order to build imaginary worlds for feature films, games, TV series, etc. Students will learn to create advanced visual development assets such as character design, environment design, and prop design.

Course is repeatable for up to 4 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

ANI 270 - The Synthetic Movement

2 unit(s)

Explores digital animation techniques, starting from where each student is technically and artistically, and from there creating an individual itinerary that will foster the achievement of a higher level of digital animation. Investigates techniques that will support the execution of each student's final creative project and dynamically adapts content to the individual project needs of each artist.

Course is repeatable for up to 4 units.

Prerequisite(s): Master of Design (MDes) students only.

Grading: Letter graded.

Anthropology

ANTH 11 - Cultural Anthropology

3 unit(s)

Basic concepts, theories and methods used in the comparative study of socio-cultural systems. Includes cultural ecology and change; political, economic and kinship systems; language, art and religion; cultural perspectives on contemporary issues.

Satisfies D: Social Sciences.

Grading: Letter Graded.

ANTH 12 - Introduction to Human Evolution

3 unit(s)

The human organism from an evolutionary perspective. The foundations of life and evolutionary theory. Introduction to primate behavior and the fossil record. Human biocultural evolution over the last sixty million years.

Satisfies B2: Life Science.

Grading: Letter Graded

ANTH 13 - Archaeology

3 unit(s)

How archaeologists invent their own version of the past, illustrated with compelling Old and New World discoveries from early prehistory to the present. How archaeological sites are discovered, excavated and analyzed; how facts are tested and fictions unmasked.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded

ANTH 25 - Human Lifecourse in Context

3 unit(s)

Human development and its physiological, psychological and sociocultural contexts. Cross-cultural perspectives on infancy, childhood, adolescence, adulthood and old age. The role of university education in the life span.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

ANTH 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ANTH 100W - Writing Workshop

3 unit(s)

Practice in improvement of writing skills appropriate to the fields of anthropology and behavioral science. Includes essays, reports and scholarly communication.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

ANTH 102 - Silicon Valley Connections

3 unit(s)

Examines issues of cultural diversity, work and family. technology in daily life, attachment to organizations, and community building in Silicon Valley through an anthropological perspective. Connections to other global regions are explored; public policy implications are developed and analyzed.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ANTH 105 - Applied Anthropology

3 unit(s)

Use of anthropological knowledge in problem solving and policy making. Survey of applied anthropology, models of applying anthropology and affecting policy making, and the use of anthropology by non-professionals in diverse careers.

Prerequisite(s): ANTH 11 or instructor consent.

Grading: Letter Graded

ANTH 107 - Eating Culture: The Anthropology of Food

3 unit(s)

This course will explore the many ways in which humans seek, collect, grow, transform and consume foods. We will examine elements of human evolutionary history that mold our current consumption choices. Changes in subsistence strategies, human migration, and colonial expansions remade our landscapes, kitchens, cuisines and our bodies. We will identify and analyze the material processes of food production, preparation and consumption; the cognitive models that define our food choices and the ways in which power and inequality drive global feast and famine. The course will draw on archaeological, biological and cultural anthropologies, as well as examining the potential applications by anthropologists of food.

Prerequisite(s): ANTH 11, Upper Division Standing.

Grading: Letter Graded

ANTH 108 - Medical Anthropology

3 unit(s)

A comprehensive examination of culture, sickness and healing in a cross-cultural perspective, emphasizing ecological/evolutionary bases of disease and healing and cultural dimensions of health in modern world.

Prerequisite(s): ANTH 11 or instructor consent.

Grading: Letter Graded

ANTH 114 - Legacy of Asia

3 unit(s)

Interdisciplinary focus on continuity and change in China and India as these ancient civilizations responded to challenges throughout their history.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ASIA 114 / HUM 114 / RELS 114. Humanities is responsible for scheduling.

ANTH 115 - The Emerging Global Culture

3 unit(s)

Introduction to systems concepts and approach as a way to investigate the global impacts of industrial technology on political, economic, social and moral/psychological structures of humankind.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ASIA 115. Anthropology is responsible for scheduling.
Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

ANTH 122 - Magic, Science and Religion

3 unit(s)

Exploring the ways in which people have attempted to gain mastery over the natural and supernatural worlds beginning with prehistoric times and concluding with modern day society and the contemporary world.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with RELS 122. Humanities is responsible for scheduling.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

ANTH 125 - Urban Anthropology

3 unit(s)

Anthropological theories and methods in analyzing the global effects of urban growth. Relevance of anthropological approach in understanding our local multiethnic metropolitan area.

Prerequisite(s): ANTH 11 or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 125. Anthropology is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ANTH 129 - Environmental Anthropology

3 unit(s)

Anthropological examination of humans' relationship to their biological environment. Course topics include population growth, resource consumption, human induced climate change, biodiversity, solid and hazardous waste, economic and cultural patterns affecting the environment, environmental risk, water resources, hazards, disasters, sustainable initiatives.

Prerequisite(s): ANTH 11

Grading: Letter Graded

Sustainability Focused - SDG 13: Climate Action SDG 15: Life on Land

ANTH 130 - Kin, Kith, and Community: The Anthropology of Social Organization

3 unit(s)

Overview of social organization focused on local forms of human relationships: kinship, non-kin relations such as friendship and networking, and community. Explores the principles of kinship and community-building. Examples will be drawn from small-scale, complex and international societies.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ANTH 131 - Theories of Culture

3 unit(s)

Seminar on evolutionary, functional and structural theories of culture. Analysis of contemporary theory and development of the discipline of anthropology.

Prerequisite(s): Upper division standing; ANTH 11; ANTH 12 or ANTH 13 or declared Anthropology major or instructor consent.

Grading: Letter Graded

ANTH 132 - Creating Built Worlds

3 unit(s)

Cross-cultural exploration of material expressions of culture. Analysis of production and consumption of places, shelters, and goods. Implications for design and policy.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ANTH 133 - Organizational Cultures

3 unit(s)

Complex organizations as dynamic sociocultural systems. Topics include organizational culture, cross-cultural study of organizations, organizational ethnography, cultural diversity, organizational learning and relevance of a cultural approach to enhance organizational effectiveness in a rapidly-changing world.

Prerequisite(s): ANTH 11 or instructor consent.

Grading: Letter Graded

ANTH 134 - Systemic Leadership

3 unit(s)

Examination of systemic leadership thought and practice, especially its application to helping resolve complex problematic issues more effectively and responsibly. Focus is on leading collaborative change efforts with diverse sets of stakeholders in group, organizational, community, cultural, and global settings.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ANTH 136 - Thought Control in Contemporary Society

3 unit(s)

Anthropological analysis of sociocultural controls influencing and regulating human thought and behavior in the contemporary period. Topics include propaganda, censorship, undue influence, coercive persuasion and "brainwashing," groupthink, messianic cults, totalitarianism, technologies of control, ritualized rebellion, resistance movements, and democratic alternatives.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ANTH 140 - Human Sexuality

3 unit(s)

Biological and sociocultural facets of human sexuality. Evolution and physiology of sex, reproductive biology/ethics and cross-cultural expression of sexual behavior.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Not acceptable as an elective in the Biology major.

Cross-listed with BIOL 140 / PH 140. Anthropology is responsible for scheduling.

ANTH 142 - Culture in Mind

3 unit(s)

Exploration of self, identity and behavior in cultural context. Cognition, socialization, cross-cultural mental health issues and comparison of intercultural communication modes.

Prerequisite(s): ANTH 11, ANTH 25 or instructor consent.

Grading: Letter Graded

ANTH 143 - Culture and Adaptation

3 unit(s)

Explores the relationship between adaptive human behavior and the environment. Theories of interaction between biology, environment and culture are illustrated by examples of mobile foraging peoples, village sedentary farmers, complex chiefdoms and state-level societies.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

ANTH 144 - Gifts, Markets, and Power

3 unit(s)

Cross-cultural analysis of economic systems. Topics include reciprocity, redistribution, and market exchange; the history of money and virtual currencies; the cultural construction of debt and credit; corporate capitalism and cyclical crises; global economic integration; and contemporary "alternative" economic systems.

Prerequisite(s): ANTH 11 or Instructor Consent

Grading: Letter Graded

ANTH 145 - Middle Eastern Traditions

3 unit(s)

Introduction to the peoples and cultures of the Middle East through exploration of the cooperation, competition, conflict and dialogues between the ethnic, national, and religious communities of contemporary Middle Eastern countries.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with MDES 145 / RELS 145. Humanities is responsible for scheduling.

ANTH 146 - Culture and Conflict

3 unit(s)

Problems of change, especially in multiethnic societies of both established and emerging nations. Technological development, modernization, social changes and value conflicts.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

ANTH 148 - Religion and Anthropology

3 unit(s)

Comparative anthropological study of religious systems and world views; Anthropological theories concerning origin and evolution of religion; structure and function of ritual and myth; types of religious specialists.

Prerequisite(s): ANTH 11, ANTH 25 or instructor consent.

Grading: Letter Graded

Cross-listed with RELS 148. Anthropology is responsible for scheduling.

ANTH 149 - Ethnographic Methods

3 unit(s)

Qualitative methods: research design, participant observation, collection of life histories, ethical responsibilities, interviewing, analysis and ethnographic writing.

Prerequisite(s): ANTH 11 or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

ANTH 151 - Modernity and Disease

3 unit(s)

Modernity and Disease explores the effects of the modern world on human biology, with specific emphasis on adaptations to the last several decades of environmental changes. Topics include reproduction, diet, and infectious, geriatric and environmental diseases.

Prerequisite(s): ANTH 12 or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

ANTH 152 - Becoming Human

3 unit(s)

This course reviews the fossil evidence for human evolution. It emphasizes areas of scientific controversy in paleoanthropology by assessing recent fossil discoveries and molecular data. Lectures are supplemented with lab demonstration of modern skeletal materials and reproductions of fossil hominids.

Prerequisite(s): ANTH 12 or instructor consent.

Grading: Letter Graded

ANTH 154 - Monkeys, Apes and Humans

3 unit(s)

Behavior, ecology and evolution of our closest animal relatives, the nonhuman primates. Interpretive emphasis toward broader understanding of human evolution and behavior.

Prerequisite(s): Any lower division anthropology or psychology course or instructor consent.

Grading: Letter Graded

ANTH 155 - Forensic Osteology

3 unit(s)

The human skeletal system for forensic identification. Lab experience in identification of osteological material to answer questions regarding sex, age, ethnicity and cause of death.

Prerequisite(s): ANTH 12 or Instructor Consent.

Grading: Letter Graded

ANTH 156 - Bioarchaeology

3 unit(s)

Study of human skeletal remains from archaeological setting to aid in reconstructing the biological and cultural past. Current theoretical and methodological issues in bioarchaeology. Emphasis on potential of skeletal analysis for uncovering disease and trauma, subsistence patterns, biological relatedness, physical activity and diverse reactions to stressors.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ANTH 157 - Forensic Anthropology

3 unit(s)

An overview of forensic anthropological methods and applications emphasizing the recovery and interpretation of human remains within the context of multidisciplinary scientific death investigation. Topics include the history of the discipline and a concentrated hands-on overview of basic human osteological identification.

Prerequisite(s): ANTH 12, BIOL 10, BIOL 21, or BIOL 65.

Grading: Letter Graded

ANTH 159 - Mummies

3 unit(s)

Explore mummies from around the world. Examine the archaeological and biological evidence of how and why mummification was practiced in these cultures, plus what the examination of mummies can tell us about past peoples cultures, diseases, and lifestyles.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

ANTH 160 - Reconstructing Lost Civilizations

3 unit(s)

Explores scientific archaeology and the reconstruction of civilizations. Topics include framing hypotheses, site selection, excavation, analysis of artifacts and ecofacts, and reconstructing social systems.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

ANTH 161 - Old World Civilizations

3 unit(s)

Prehistoric cultural development in Europe, Asia, and Africa from the Paleolithic to the development of civilizations. Discussions of early states include social organization, economic systems, art, architecture and intellectual achievements.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ANTH 162 - Inca, Aztec and Maya Civilization

3 unit(s)

Ancient high civilizations of Mexico, Central America and Andean South America, their predecessors and contemporaries. Explores sociocultural systems with emphasis on art, architecture and intellectual achievements.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ANTH 164 - North America before 1492

3 unit(s)

Archaeology and history of North American peoples before 1492. Precolumbian culture areas and relationships between them; development of state societies; relationships with and resistance to European colonizers.

Prerequisite(s): Upper division standing or instructor approval

Grading: Letter Graded

ANTH 165 - Historical Archaeology

3 unit(s)

Course centers on the archaeology of the recent past. Students explore how to employ archaeological material analysis and archival research to develop a fuller understanding of the development of the modern industrialized world.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ANTH 168 - Archaeological Methodology

3 unit(s)

Central methods of archaeological practice. Methods of archaeological inquiry, research design, and the cultural resource management presented through case studies in historic and prehistoric archaeology.

Prerequisite(s): ANTH 13.

Grading: Letter Graded

ANTH 169 - Archaeological Site Excavation

3 unit(s)

Artifact recovery and analysis during archaeological field project. All phases of professional archaeological practice leading to publication of findings. Sites may be local or distant.

Misc/Activity: 6 hours activity

Prerequisite(s): ANTH 13 or instructor consent.

Grading: Letter Graded

ANTH 173 - Multimedia Anthropology

3 unit(s)

Planning, production, and presentation of ethnographic materials using various media. Theoretical and applied aspects of multimedia anthropology. Use of multiple media in data collection, analysis, evaluation, and representation of culture including photographs, documentary video, websites, social networking platforms, and infographics.

Prerequisite(s): ANTH 11 or instructor consent.

Grading: Letter Graded

ANTH 175 - Anthropology of Native America

3 unit(s)

Anthropological survey of North American indigenous peoples and issues from historical and contemporary perspectives. Topics include cultural variation and diversity, decolonizing narratives of indigenous histories, resistance, social and environmental justice, law, and politics.

Prerequisite(s): Any lower division Anthropology course or Instructor Consent.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

ANTH 176 - Native California: Past and Present

3 unit(s)

Native Californian cultures before and after white contact, emphasizing ecological, sociopolitical and religious interrelationships, colonialism, resistance, and struggles for tribal sovereignty. Ethnographic, archaeological and documentary sources.

Prerequisite(s): ANTH 11 or Instructor Consent.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

ANTH 177 - Anthropology of Asia

3 unit(s)

Sociocultural themes of selected Asia cultures. Covers cultural pluralism, intercultural contact, social organization, worldview and economic adaptations. Explores connections within the Pacific Rim, especially to the local region. Course is repeatable once for credit when different cultures are emphasized.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ASIA 177. Anthropology is responsible for scheduling.

ANTH 180 - Individual Studies

1-4 unit(s)

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

ANTH 184 - Directed Reading

1-4 unit(s)

Directed reading in cultural anthropology, physical anthropology or archaeology to gain a broader understanding of a particular topic, culture or theoretical issue.

Prerequisite(s): Upper division standing and instructor consent.

Grading: Credit/No Credit

ANTH 190 - Designing Research

3 unit(s)

Describes research conception, development and implementation for academic research and applied careers alike. Emphasizes writing grant proposals, academic theses, and professional contracts. Topics include research question identification, methodological and technical approaches, broader significance and impact of research, and ethical considerations.

Prerequisite(s): Declared major in Anthropology or Behavioral Sciences; Completion of Area Z (100W); Two of the following courses: ANTH 11, ANTH 12, ANTH 13 or Instructor consent.

Grading: Letter Graded

ANTH 191 - Frontiers of Anthropology

3 unit(s)

Critical contemporary social issues that cut across archaeology and cultural and physical anthropology. Anthropology as a holistic social science. Seminar format uses reading, simulations and class discussions. Professionalism in the discipline stressed.

Prerequisite(s): ANTH 131 and senior standing or instructor consent.

Grading: Letter Graded

ANTH 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ANTH 193 - Behavioral Science in Practice

3 unit(s)

Capstone workshop for behavioral science majors. Students assess methods and knowledge of anthropology, psychology and sociology, and synthesize them by reflecting upon case studies of individual, organizational, community, and global issues. Emphasis is on cooperative learning, reflection and synthesis of skills and knowledge.

Prerequisite(s): Senior standing. Allowed Declared Major: Behavioral Science or Behavioral Science double major.

Grading: Letter Graded

Cross-listed with PSYC 193 / SOCI 193. Anthropology is responsible for scheduling.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

ANTH 195 - Anthropology Practicum

1-6 unit(s)

Advanced practicum in archaeology, ethnography, physical anthropology or linguistics.

Repeatable for credit.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

ANTH 198 - Special Projects

1-4 unit(s)

Independent research in cultural anthropology, physical anthropology or archaeology.

Prerequisite(s): Upper division standing and instructor consent.

Grading: Credit/No Credit

ANTH 230 - Theory in Practice

3 unit(s)

In-depth analysis of anthropological and related theory and accompanying methodology, emphasizing the use of theory in practice.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): ANTH 131 or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ANTH 231 - Applications Core

3 unit(s)

Methods for the analysis of sociocultural systems, ethnographic evaluation, and program/design development. Emphasis on professionalism, project management, budgeting, ethics, and contracts.

Prerequisite(s): ANTH 232, ANTH 105 or instructor consent.

Grading: Letter Graded

ANTH 232 - Applications Core

3 unit(s)

Methods for the analysis sociocultural systems, ethnographic evaluation, and program/design development. Emphasis on professionalism, project management, budgeting, ethics, and contracts

Prerequisite(s): ANTH 231 or instructor consent.

Grading: Letter Graded

ANTH 233 - Fields of Application

3 unit(s)

Survey of domains in which anthropological skills and knowledge are applied. Topics include health,

business and industry, sustainable regions, and immigration. Emphasis is on opportunities for anthropological contributions.

Corequisite(s): ANTH 231 or instructor consent.

Grading: Letter Graded

ANTH 234 - Advanced Research Methods

3 unit(s)

Advanced research methods including individual and group interviewing, structured observation, and formal analytical methods. Emphasis on data management, ethnographic writing, and presentation of data through different media.

Prerequisite(s): ANTH 149 or equivalent.

Grading: Letter Graded

ANTH 235 - Quantitative Methods

3 unit(s)

Advanced quantitative methods to gain comprehension of statistical analyses, especially in regards to predictive value for regional issues. Emphasis will be on understanding statistics, creating databases, using statistical software packages, and employing proper statistics.

Prerequisite(s): STAT 95 or equivalent.

Grading: Letter Graded

ANTH 280 - Individual Studies

1-4 unit(s)

Advanced individual research and projects.

Prerequisite(s): Instructor consent and department chair approval.

Grading: Credit/No Credit/Incomplete.

ANTH 287 - Special Topics

1-3 unit(s)

Contemporary issues in applied and practicing anthropology not covered in other courses. Course is repeatable once for credit on different topic with advisor consent. Repeatable for credit when topic changes.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

ANTH 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad

Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ANTH 298 - Anthropology Project

1-6 unit(s)

Course consists of supervised units applying anthropology in a project, the documentation of that project and the evaluation of the project in a written report. Course is repeatable for credit in the same semester.

Grading: Credit/No Credit/RP.

ANTH 299 - Master's Thesis

1-6 unit(s)

Independent anthropological research conducted under supervision of faculty advisor.

Prerequisite(s): Graduate standing.

Grading: Credit/No Credit/RP.

ANTH 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on project or thesis.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Art

ART 1 - Professional Preparation in Art

1 unit(s)

Introduction to skills and documents needed in preparation for professional careers in the arts; orientation to SJSU. Intended for BA/BFA ART majors and minors.

Grading: Credit/No Credit

ART 2 - The Artist in Contemporary Culture

3 unit(s)

Introduces art beginners to roles that artists play in contemporary culture. Critical readings and problem-solving: principles of form and theory and research applied to real-world situations confronted by contemporary artists. Orientation to SJSU.

Grading: Letter Graded

ART 3 - Medium and Message

3 unit(s)

This undergraduate seminar introduces intermediate-level artists to a research and project-based approach to artmaking with a focus on contemporary, idea-appropriate mediums and methods. Orientation to SJSU.

Grading: Letter Graded

ART 12 - Two-Dimensional Design and Color Concepts

3 unit(s)

Theories and applications of two-dimensional design and color in visual art and design. Studio practice.

6 hours activity

Grading: Letter Graded.

Note(s): ART 12 is treated as a repeat for students who have taken ANI 10 (formerly ANI 12).

ART 13 - Three-Dimensional Design Concepts

3 unit(s)

Theories and applications of three-dimensional form in visual art and design. Studio practice.

Misc/Activity: 6 hours activity

Grading: Letter Graded

ART 14 - Color

3 unit(s)

Attributes of color. Studio practice exploring theories and creative use of color in visual art and design.

6 hours activity

Grading: Letter Graded.

Note(s): ART 14 is treated as a repeat for students who have taken ANI 21 (formerly ANI 14).

ART 15 - Digital 2D Foundations

3 unit(s)

Course is an introduction to the fundamentals of digital 2D making, from research and ideation to evaluation and reflection.

Activity 6 hours.

Grading: Letter Graded.

ART 24 - Drawing I

3 unit(s)

Elements and principles of drawing. Studio practice emphasizing line, shape and light-dark used in visual art and design.

6 hours activity

Grading: Letter Graded.

Note(s): ART 24 is treated as a repeat for students who have taken ANI 11 (formerly ANI 24)..

ART 25 - Expressive Drawing

3 unit(s)

Drawing concepts emphasizing creative expression. Studio practice with a variety of methods and materials.

Misc/Activity: 6 hours activity

Prerequisite(s): ART 24.

Grading: Letter Graded

ART 26 - Drawing II

3 unit(s)

Observation and depiction of volume and perspective.

Misc/Activity: 6 hours activity

Prerequisite(s): ART 24.

Grading: Letter Graded

ART 39 - Multicultural Arts for Children

3 unit(s)

Focus on teaching arts of many cultures, places and times to young people (preschool through high school).

Misc/Lab: Lab 6 hours.

Grading: Letter Graded

ART 46 - Introduction to Ceramics

3 unit(s)

Studio work in ceramics; a survey of methods used by contemporary artists. Includes use of the potter's wheel, handbuilding techniques, clay preparation, glazing and firing for utilitarian and sculptural work.

Misc/Activity: 6 hours activity

Grading: Letter Graded

ART 47 - Introduction to Metalsmithing

3 unit(s)

Introduction to tools, materials and techniques for small scale metal work. Primer course for metalsmithing and jewelry.

Misc/Activity: 6 hours activity

Grading: Letter Graded

ART 61 - Beginning Painting

3 unit(s)

Studio practice in selected media. Specific content, materials and subject matter may vary with instructors.

Misc/Activity: 6 hours activity

Prerequisite(s): ART 12 and ART 24

Grading: Letter Graded

ART 68 - Beginning Sculpture: Object & Concept

3 unit(s)

Introduction to core sculptural media: woodworking, welding, mold-making, metal-casting and working with found objects. Emphasis on concept development and critical thinking.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 13 or instructor consent.

Grading: Letter Graded

ART 74 - Introduction to Digital Media

3 unit(s)

Fundamental concepts and methods of Digital Media production. Introduction to visualization software applications and web presentation techniques.

Misc/Lab: Activity 6 hours.

Grading: Letter Graded

ART 75 - Introduction to Digital Video Art

3 unit(s)

Introduction of the fundamental skills, software and techniques involved in the production of Digital Video. Critical discourse and contemporary art theories will be explored.

Misc/Activity: 6 hours activity

Grading: Letter Graded

ART 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ART 100W - Writing Workshop: Fine Arts

3 unit(s)

Advanced writing course for fine art majors, based upon philosophical issues and current professional practice in art. Clear analytical and critical writing in examination of these topics.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: Art, Art History, Interior Design, Industrial Design, Graphic Design, Fine Arts.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

ART 101 - Digital Media Art

3 unit(s)

Experimental applications in creative coding as an art practice. Focus includes programming interactivity, generative graphics, intro to data visualization and user interface and user experience strategies.

Misc/Activity: 6 hours activity

Prerequisite(s): ART 74, ART 75 or instructor consent

Grading: Letter Graded

ART 102 - 3D Modeling and Printing

3 unit(s)

Introduces experimental 3D methods with a focus on conceptual and creative processes using 3D modeling software and 3D printing technology while addressing contemporary uses for artistic production.

Misc/Activity: 6 hours activity

Prerequisite(s): ART 75 or instructor consent.

Grading: Letter Graded

ART 103 - Art as System

3 unit(s)

Experimental applications in the use of systems-based approach for art making. Focus on various CNC 3D printing/cutting methods, parametric art, CAD/CAM techniques, physical computing integration and collaborative art models.

Misc/Lab: Activity 6 hours.

Prerequisite(s): ART 75 and ART 101

Grading: Letter Graded

ART 104 - Interdisciplinary Seminar in Digital Media Art

3 unit(s)

Investigation of theoretical topics in digital media art and analysis of contemporary technology research issues.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

ART 105 - Advanced Digital Video

3 unit(s)

Advanced exploration of digital video within the context of conceptual art practice. Focus on issues and applications of digital technology and critical thinking in art with specific focus on video, the Internet and alternative media applications.

Misc/Lab: Lab 9 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 75 or permission of instructor.

Grading: Letter Graded

ART 106 - Topics in Human Machine Interface

3 unit(s)

Experimental applications in physical computing in art. Topics include computer-controlled sensors and actuators, the nature of the cyborg and interactive electronic interfaces for sculpture, environments and performance. Course is repeatable up to 6 units, when course topic changes.

Misc/Lab: Activity 6 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 75 and ART 101 or permission of instructor.

Grading: Letter Graded

ART 107 - Advanced Projects in Digital Media Art

3 unit(s)

Advanced issues and applications of digital technology in art. Application of interactive technology in installation and performance. Emphasis on collaborative projects, user interaction, and experience. Course is repeatable up to 6 units.

Misc/Lab: Activity 6 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 75 or permission of instructor.

Grading: Letter Graded

ART 108 - Introduction to Game Studies

3 unit(s)

Introduction to the systems, design, history, and cultural analysis of games with emphasis on critical studies, development, technological literacy, markets and impact on society.

Misc/Activity: 6 hours activity.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded.

Cross-listed with CS 108. Art and Art History is responsible for scheduling.

ART 109 - Web Development in HTML, CSS and JavaScript

3 unit(s)

Tracing the emergence of networked, online, and screen-based contexts for the exhibition of new media art, course explores programming, tools and methodologies for the creation of websites, web applications and net-based digital media artworks. Students develop website architectures, user interfaces, style sheets, animation and web-optimized content using industry-standard tools and techniques. Development of a collaborative networked installation environment and/ or online gallery for the exhibition of culminating work.

Prerequisite(s): ART 75 and ART 101.

Grading: Letter Graded

ART 110 - History and Theory of New Media

3 unit(s)

The history of art and technology introducing contemporary critical theory and practice. Course will address digital visualization, simulation, interactive network technologies in the arts and speculate on the artistic implications of advances in engineering and science.

Prerequisite(s): ARTH 70B or ARTH 72 or instructor consent.

Grading: Letter Graded

Cross-listed with ARTH 110. Art and Art History is responsible for scheduling.

ART 132 - Topics in Intermediate Ceramics

3 unit(s)

Investigation of ceramic form and surface design with emphasis on the vessel. Development of skills on the potter's wheel and in glazing, kiln loading and firing. Included are raku, salt, earthenware, stoneware and porcelain. Repeatable for up to 9 units of credit when course topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 46 or instructor consent

Grading: Letter Graded

ART 133 - Topics in Ceramic Sculpture

3 unit(s)

Focus on handbuilding and nontraditional techniques in clay and related media. Includes gallery and studio visits.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 13, ART 46 or instructor consent.

Grading: Letter Graded

ART 134 - Topics in Advanced Ceramics

3 unit(s)

Focus on personal stylistic development, individual critiques and portfolio preparation. Includes gallery and studio visits. Repeatable for Credit when topic changes, up to 3 times.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 132 or ART 133.

Grading: Letter Graded

ART 135 - Topics in Moldmaking for Artists

3 unit(s)

Introduction to moldmaking for upper division/graduate students. Course will include techniques for rubber molds for wax or plastic, molds for pressed clay, slip casting and waste molds. Course is repeatable for a total of 6 units.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 13 or instructor consent.

Grading: Letter Graded

Note(s): Offered only occasionally.

ART 137 - Figure Modeling

3 unit(s)

Representation of the human figure in three dimensions. Sculpting in clay from a live model. Course is repeatable for a total of 6 units.

Misc/Lab: Activity 6 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 13 and ART 55 or instructor consent.

Grading: Letter Graded

ART 138 - Elementary Art Methods

3 unit(s)

Equips prospective pre-K through high school educators with the basic knowledge, skills, and strategies to effectively organize and provide sequential art education. Emphasis on art teaching methods, art curriculum development, and art experiences.

Misc/Activity: 6 hours activity

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ART 139 - Teaching Diversity through Art

3 unit(s)

Strategies for teaching ideas of diversity through art in the preschool through high school classroom. Students deepen their understanding of culture and context and of why the arts matter.

Misc/Activity: 6 hours activity

Prerequisite(s): upper-division standing or instructor consent

Grading: Letter Graded

Cross-listed with CA 139. Art and Art History is responsible for scheduling.

Sustainability Related - SDG 4: Quality Education

ART 140 - Topics in Glass

3 unit(s)

Introduction to glass working techniques, chemistry, history and concept. Basic glass blowing, sand casting, slumping, fusing, cold working, stained glass and gluing techniques. Taught through a series of hands-on projects. Repeatable for up to 9 units when topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Grading: Letter Graded

ART 141 - Topics in Advanced Glass

3 unit(s)

Technical and esthetic aspects of glass for sculpture and design. Advanced blowing, kiln casting, mold making, lamp working, lathe techniques and surface treatments. Repeatable for up to 9 units of credit, when topic changes.

Misc/Lab: Activity 6 hours.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 140, ART 13 or instructor consent.

Grading: Letter Graded

ART 147 - Topics in Metalsmithing and Jewelry

3 unit(s)

Technical and esthetic aspects of metalsmithing and jewelry design. Fabricating, surfacing, soldering, raising, forming and forging. Repeatable for 12 units of credit when topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 12 units.

Prerequisite(s): ART 47.

Grading: Letter Graded

ART 149 - Topics in Jewelry and Small Sculpture

3 unit(s)

Technical and esthetic aspects of metalcasting for small-scale sculpture and jewelry. Pattern materials, gating techniques, burnout procedure, vacuum casting, centrifugal casting and finishing. Repeatable for 12 units of credit when topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Upper division standing or permission of instructor.

Grading: Letter Graded

ART 150 - Topics in Printmaking and Letterpress

3 unit(s)

Introduction to relief printing, letterpress and related processes. Studio practice.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 12 and ART 24

Grading: Letter Graded

ART 151 - Topics in Screen-Printing

3 unit(s)

Screen printing and related photographic processes. Studio practice. Repeatable for Credit when topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Grading: Letter Graded

ART 152 - Topics in Lithography

3 unit(s)

Studio practice. A comprehensive study of the practice of stone and metal plate lithography. Course is repeatable for a total of 9 units when topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 61 (or equivalent).

Grading: Letter Graded

ART 153 - Topics in Intaglio Processes

3 unit(s)

Studio practice towards an understanding of the methods, techniques and procedures necessary to make intaglio prints. Course is repeatable for a total of 9 units when course topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 61 (or equivalent)

Grading: Letter Graded

ART 155 - Topics in Monotype

3 unit(s)

Studio practice. An investigation of the methods, techniques and syntax of the monotype and monoprint. Course is repeatable for total of 9 units when course topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 61 (or equivalent).

Grading: Letter Graded

ART 158 - Topics in Drawing III

3 unit(s)

Form and expression in drawing. Selected media. Course Repeatable for up to 9 units of credit when topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 25 or ART 26

Grading: Letter Graded

ART 162 - Watercolor

3 unit(s)

Painting with various water base media.

Misc/Activity: 6 hours activity

Prerequisite(s): ART 12 and ART 24.

Grading: Letter Graded

ART 164A - Intermediate Painting

3 unit(s)

Emphasis may vary with instructor. Course is repeatable for a total of 6 units.

Misc/Activity: 6 hours activity

Prerequisite(s): ART 61 (or equivalent).

Grading: Letter Graded

ART 164B - Intermediate Painting II

3 unit(s)

Intermediate Painting II expands and builds on the concepts and skills introduced in ART 164A-Intermediate Painting I; with the goal of developing more complex content and process in preparation for Advanced Painting.

Misc/Activity: 6 hours activity

Prerequisite(s): ART 61 and ART 164A or instructor consent

Grading: Letter Graded

ART 165 - Topics in Figure Painting

3 unit(s)

Figure and portrait painting from the model. Repeatable for up to 9 units of credit when course topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 26 and ART 61.

Grading: Letter Graded

ART 166 - Topics in Advanced Painting

3 unit(s)

Emphasis may vary with instructor. Repeatable for 9 units of credit when topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 61, ART 164A, ART 164B and ART 165 or equivalent, or instructor consent

Grading: Letter Graded

ART 168 - Topics in Woodworking

3 unit(s)

Introduction to the physical structure of wood and to the design and construction of furniture and sculptural objects in wood. Also, an introduction to the historical use of wood joinery in man-made objects. Course is repeatable for 6 units of credit.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 13 or instructor consent.

Grading: Letter Graded

ART 169 - Topics in Metal Sculpture

3 unit(s)

Conception and creation of three-dimensional aesthetic form using metal techniques including casting, welding, fabrication and other forming processes. Repeatable for up to 9 units when topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 13.

Grading: Letter Graded

ART 170 - Topics in Fabricated Sculpture

3 unit(s)

Fabricated Sculpture includes welding training, a concise history of fabricated metal sculpture since 1945, and studio time wherein the student practices skills and executes three steel sculptures. Repeatable for up to 9 units of credit when course topic changes.

Misc/Lab: Lab 6 hours.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): ART 13.

Grading: Letter Graded

ART 172 - Intermediate Sculpture: System/Structure

3 unit(s)

This is an intermediate-level sculpture class with a focus on contemporary materials and processes. Students will make sculptural responses to timely issues raised in course readings and lectures.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 68 or instructor consent.

Grading: Letter Graded

ART 173 - Topics in Installation Art

3 unit(s)

Exploration of cross-disciplinary artmaking, with an emphasis on conceptual development and critical dialogue. Students make installation art and site-specific artworks using a variety of techniques and processes, including time-based media. Course can be repeated for up to 6 units when course topic changes.

Misc/Activity: 6 hours activity

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 13 or instructor consent.

Grading: Letter Graded

ART 174A - Museum and Gallery Operations

3 unit(s)

Theoretical and technical problems of gallery and museum work including administration, security and curatorship.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ARTH 174A. Art and Art History is responsible for scheduling.

ART 174B - Internship: Museum and Gallery Operations

3 unit(s)

Supervised internship in museum or gallery. Experience including installation, curating and administration. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 174A.

Grading: Credit/No Credit

Cross-listed with ARTH 174B. Art and Art History is responsible for scheduling.

ART 175 - Special Topics in Studio Art

3 unit(s)

Varying concepts, media or techniques. Emphasizing individual expression, professional ability and recent movements and directions in art.

Misc/Activity: 6 hours activity

Prerequisite(s): Upper division standing in art.

Grading: Letter Graded

ART 177 - Professional & Business Practices

3 unit(s)

An introduction to the ways and means necessary to build a career in the arts while successfully negotiating its challenges, this course will provide information on portfolio development and professional and business practices essential for the practicing artist.

Prerequisite(s): Upper division or graduate standing.

Grading: Letter Graded

ART 178 - Art Field Work

1-3 unit(s)

Professional practice in a selected field.

Prerequisite(s): Application for assignment made preceding semester. Supervisor and department approval.

Grading: Credit/No Credit

ART 179 - Special Problems in Art

3 unit(s)

Individual study on a tutorial basis.

Prerequisite(s): Qualified seniors or graduates.

Grading: Credit/No Credit

ART 180 - Individual Studies

1-3 unit(s)

Special topics or projects by arrangement with instructor. Course is repeatable up to 4 units of credit toward graduation.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Majors or minors with Department of Art & Art History consent.

Grading: Credit/No Credit

ART 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ART 193 - Digital Materials

3 unit(s)

Technical skills to facilitate the realization of projects conceptually rooted in an analysis of computational media and its relationship to the physical world. Introduction to video and computational outputs integrated with tangible presentation methods. Material survey, exhibition strategies, and introductory fabrication techniques that facilitate projects bridging computation, architecture, objects, and the body.

6 hours activity.

Prerequisite(s): ART 74 and ART 75.

Grading: Letter Graded

Cross-listed with DSGN 193. Art is responsible for scheduling.

ART 195 - BFA Group Exhibition

3 unit(s)

Student develop individual approaches, methodologies, and practices in the creation of art and participate in a final group show demonstrating professional competence in the students area of concentration. Participation in the final exhibition with the approval of the student's advisory committee is required.

Prerequisite(s): 30 units of upper division art, admission to the BFA program and ART 198, or ART 210 with advisor's approval.

Grading: Credit/No Credit

ART 197 - BA Senior Project

3 unit(s)

Creation of a studio art or design capstone project consisting of new work in media selected by student to be documented and presented to studio or design faculty.

Prerequisite(s): 15 units of upper division work in the major.

Grading: Credit/No Credit

ART 198 - BFA Seminar

3 unit(s)

Preparation for BFA project and postgraduate career planning, this course includes field trips, class discussions and studio visits with art professionals.

Prerequisite(s): Prior acceptance in the B.F.A. program.

Grading: Letter Graded

ART 199 - BFA Project

3 unit(s)

A project demonstrating professional competence in area of concentration. A gallery exhibition with the approval of the student's advisory committee is required.

Prerequisite(s): 30 units of upper division art, admission to the BFA program and ART 198, or ART 178 with advisor's approval.

Grading: Credit/No Credit

ART 200W - Professional Writing in Contemporary Art

3 unit(s)

Graduate seminar focusing on issues and practices of writing about contemporary art, including artist statements, exhibition catalogs and art criticism.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate Standing in Department of Art & Art History.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ART 208 - Graduate Photography Critique

3 unit(s)

Professional practice in the discipline of fine art photography is multi faceted and complex. To embrace this diversity, Art 208 Graduate Photography Critique offers rotating topics that influence portfolio development, emphasize an ongoing critique of work, and build a healthy professional practice. Repeatably for up to 18 units of credit when course topic changes.

Misc/Activity: 9 hours lab

Course may be repeated for credit for up to 18 units.

Prerequisite(s): Classified status in art or instructor consent.

Grading: Letter Graded

ART 210 - Seminar in Digital Media Art

3 unit(s)

Theoretical discourse involving art and information culture. Review and analysis of contemporary theory and critical literature. Emphasis on collaborative activities and art practice.

Prerequisite(s): Classified status in art or instructor consent.

Grading: Letter Graded

ART 217 - Tutorials in Pictorial Arts

3 unit(s)

Individual projects in painting, drawing and printmaking supervised by an instructor.

Prerequisite(s): Classified or conditionally classified status in art and instructor consent.

Grading: Letter Graded

ART 219 - Tutorials in Spatial Art

3 unit(s)

Individual projects in sculpture, installation, performance and other 3-D media supervised by an instructor.

Prerequisite(s): Classified or conditionally classified status in art and instructor consent.

Grading: Letter Graded

ART 220 - Tutorials in Digital Media Art

3 unit(s)

Individual problems in selected area of research or practice.

Prerequisite(s): Classified status in art and instructor consent.

Grading: Letter Graded

ART 222 - Tutorials in Photography

3 unit(s)

Individual projects employing photographic media supervised by an instructor.

Prerequisite(s): Classified or conditionally classified status in art and instructor consent.

Grading: Letter Graded

ART 260 - Special Tutorials in Art

3 unit(s)

Individual problems in a selected art area supervised by an instructor.

Prerequisite(s): Classified or conditionally classified status in art and instructor consent.

Grading: Credit/No Credit.

ART 276 - Artists Teaching Art

3 unit(s)

Seminar will examine theoretical and practical issues of art education which relate to traditional institutions of higher learning as well as to other teaching opportunities in the community.

Prerequisite(s): Classified graduate status or instructor consent.

Grading: Letter Graded

ART 281 - Interdisciplinary Critique Seminar

3 unit(s)

Interdisciplinary peer group critiques and discussion of individual student work. Repeatable for up to 9 units when topic changes.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Admission to the MFA in Art program.

Grading: Letter Graded

ART 282A - Seminar in the Theory and Criticism of Contemporary Art

3 unit(s)

A historical approach to the thought of major critics and theoreticians of contemporary art.

Prerequisite(s): ARTH 191A and admission to classified MFA status in art or instructor consent.

Grading: Letter Graded

ART 282B - Seminar in Contemporary Art

3 unit(s)

An examination of a particular theme in contemporary art theory. Repeatable for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ARTH 191A and admission to classified MFA status in art or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ART 297A - Master's Special Study

3 unit(s)

Advanced individual research in an area closely related to the master's thesis, research or project. Course may be repeated for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Acceptance of qualifications for candidacy by Art Graduate Committee and permission of Thesis, Research or Project Committee chair.

Grading: Credit/No Credit/Incomplete.

ART 297B - Master's Project

3 unit(s)

Advanced projects in Creative Expression.

Prerequisite(s): Advancement to candidacy for the master's degree in art.

Grading: Credit/No Credit/RP.

ART 298A - MFA Project Planning Seminar

3 unit(s)

MFA Project (exhibition and written portion) preparation through advance research, professional practice, and project management activities.

Prerequisite(s): Advancement to candidacy for the MFA in Art degree.

Grading: Credit/No Credit/RP

ART 298B - MFA Project

3 unit(s)

A creative project of professional caliber.

Prerequisite(s): Advancement to candidacy for the MFA in Art degree.

Grading: Mandatory Credit/No Credit/RP

ART 1290R - Culminating Experience Supervision

1 unit(s)

This course satisfies the requirement that all graduate students must remain enrolled during semesters in which they are working solely on their theses or projects, for which they have previously received but not cleared an RP grade.

Course may be repeated for credit for up to 20 units.

Prerequisite(s): Existing RP grade in a graduate-level thesis or project course

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Art Education

ARED 150 - Field Experience in the Arts

3 unit(s)

Provides opportunities for those considering teaching, K-12 levels, to interact with outstanding teachers of the arts in the region through structured field experiences in classrooms, reflective writing, community service, and weekly discussion in a seminar setting.

Prerequisite(s): ART 138 or ART 139, upper division standing, or instructor consent.

Grading: Letter Graded

Cross-listed with CA 150. Art and Art History is responsible for scheduling.

ARED 184Y - Student Teaching II - Classroom Teaching

4 unit(s)

Minimum 80-120 class periods of classroom, teaching laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities and seminar.

Prerequisite(s): Major and Education Department joint approval.

Grading: Credit/No Credit

ARED 184Z - Student Teaching III - Classroom Teaching

4 unit(s)

See ARED 184Y for course description.

Grading: Credit/No Credit

Note(s): May be in different subject/school and will be at a different grade level.

ARED 238 - Principles of Art Education

3 unit(s)

This course is designed to equip prospective art educators with the knowledge, skills, and strategies to effectively organize and implement sequential art instruction at the secondary level with an emphasis on Art Teaching Methods and Art Curriculum Development.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

ARED 365 - Field Experience Seminar in Art Education

1 unit(s)

This companion to the Phase II/III student teaching experience in the Single Subject Credential Program provides a forum for discussing field experiences and prepared candidates for the program's capstone assessment: The performance Assessment for California Teachers (PACT).

Prerequisite(s): EDSC 184X

Corequisite(s): ARED 184Z (except for candidates in the Single Subject Internship Program).

Grading: Credit/No Credit.

Art History

ARTH 11 - Modern Art History

3 unit(s)

Introductory survey of 20th and 21st century art, its history, and its contexts. Related developments in illustration, design, other forms of art production, and cultural institutions such as museums, galleries, publications also considered.

Pre/Corequisite(s): ART 12 or ART 13 or PHOT 40 or instructor consent.

Grading: Letter Graded

ARTH 15 - Intro to Visual Culture

3 unit(s)

Key ideas and debates pertaining to visual culture considered through interdisciplinary study of art and media as significant social forces.

Satisfies C1: Arts.

Grading: Letter Graded

ARTH 70A - Art History, Prehistoric to Medieval

3 unit(s)

Western painting, sculpture and architecture from Prehistoric times through the Middle Ages. Important art works of Egypt, Greece, Rome and Medieval Europe.

Satisfies C1: Arts.

Grading: Letter Graded

ARTH 70B - Art History, Renaissance to Modern

3 unit(s)

Western painting, sculpture and architecture from the Renaissance to the present. Masters of the Renaissance, Baroque, Rococo, Neo-Classic, Romantic and Modern periods, including Da Vinci, Michelangelo, Durer, Rembrandt, Vermeer, David, Delacroix and Monet.

Satisfies C1: Arts.

Grading: Letter Graded

ARTH 70C - Arts of Asia

3 unit(s)

Major trends in the art of China, India and Japan, as well as Southeast and Central Asia and Korea, from the Neolithic period to the twentieth century.

Satisfies C1: Arts.

Grading: Letter Graded

Cross-listed with ASIA 70C. Art and Art History is responsible for scheduling.

ARTH 72 - Design in Society

3 unit(s)

Considers the cultural role of design in addressing human needs in shaping the environment, in providing shelter, clothing, utilitarian objects, and transportation, in visual communication for political and entertainment purposes.

Satisfies C1: Arts.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

ARTH 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ARTH 101 - Introduction to Practice of Art History

3 unit(s)

Introduction to practice of art history including visual analysis, research tools, and examination of professional options.

Prerequisite(s): Art History and Visual Culture major or instructor consent.

Grading: Letter Graded

ARTH 110 - History and Theory of New Media

3 unit(s)

The history of art and technology introducing contemporary critical theory and practice. Course will address digital visualization, simulation, interactive network technologies in the arts and speculate on the artistic implications of advances in engineering and science.

Prerequisite(s): ARTH 70B or ARTH 72 or instructor consent.

Grading: Letter Graded

Cross-listed with ART 110. Art and Art History is responsible for scheduling.

ARTH 126 - History of Photography

3 unit(s)

Technical developments and aesthetic trends in photography traced from its invention in the nineteenth century to the present day. Slide presentations, discussions, field trips.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

Cross-listed with PHOT 126. Art and Art History is responsible for scheduling.

ARTH 127 - Photography, Film, and Architecture

3 unit(s)

This course presents a closely contextualized examination of major photographers, architects and film-makers through their work and their interpretations of modern culture and its spaces. Lectures will cover developments in photography, film and architecture, as well as the changing relationship among these media and other domains visual culture.

Prerequisite(s): ARTH 70B or Instructor Consent

Grading: Letter Graded

ARTH 150 - Modern Textiles: A Global History of Art and Design

3 unit(s)

Course examines modern textile art and design through the lens of techniques and textile typologies as they emerge in different cultural traditions and through developments in technology. It considers how historical textile practices inform contemporary artistic expression.

Prerequisite(s): Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

ARTH 160 - Modern Architecture

3 unit(s)

Development of modern architecture from the late 19th century to the present, including Richardson, Sullivan, Wright, Le Corbusier, the Bauhaus, Mies van der Rohe, Meier and Gehry.

Prerequisite(s): ARTH 70B, ARTH 72 or instructor consent.

Grading: Letter Graded

ARTH 161 - Contemporary Architecture

3 unit(s)

History of contemporary architecture since 1945, covering major trends and issues in a global context; includes Louis Kahn, Frank Gehry and Zaha Hadid.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 162 - California Architecture

3 unit(s)

History of architecture in California since 1700, covering major architectural developments in a national and transnational context; includes Bernard Maybeck, Richard Neutra and Morphosis.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 163 - Twentieth Century Urban Design

3 unit(s)

History of urban design since 1900, covering theories and practices of urban design in the industrialized world; includes Camillo Sitte, Le Corbusier and Frank Lloyd Wright.

Prerequisite(s): ARTH 70B or URBP 151 or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 163. Art and Art History is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ARTH 174A - Museum and Gallery Operations

3 unit(s)

Theoretical and technical problems of gallery and museum work including administration, security and curatorship.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ART 174A. Art and Art History is responsible for scheduling.

ARTH 174B - Internship: Museum and Gallery Operations

3 unit(s)

Supervised internship in museum or gallery. Experience including installation, curating and administration. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ART 174A.

Grading: Credit/No Credit

Cross-listed with ART 174B. Art and Art History is responsible for scheduling.

ARTH 175 - Theories of Art History and Art Criticism

3 unit(s)

The study of approaches used by professional art historians and critics. The focus will be on 20th century writers who helped shape the development of contemporary art history and criticism.

Prerequisite(s): Upper division standing, 6 units of ARTH 70A, ARTH 70B, and/or ARTH 70C or instructor

consent.

Grading: Letter Graded

ARTH 176A - Graphic Design History and Theory

3 unit(s)

The history of graphic design and typography with an emphasis on the 20th century. Define technological, historical and theoretical concerns and influences on individuals and movements in graphic design.

Prerequisite(s): ARTH 72, completion of Area Z, or instructor consent.

Grading: Letter Graded

Cross-listed with DSGD 176A. Art and Art History is responsible for scheduling.

ARTH 178 - Art History Field Work

1-3 unit(s)

Professional practice in a selected field of Art History.

Prerequisite(s): Application for assignment made preceding semester. Supervisor and department approval.

Grading: Credit/No Credit

ARTH 180 - Individual Studies in Art History

1-4 unit(s)

Special topics or projects by arrangement with instructor. Course is repeatable up to 4 units of credit toward graduation.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Majors or minors with Department of Art & Art History consent.

Grading: Letter Graded

ARTH 181 - Special Topics in Art History

3 unit(s)

In-depth analysis of a selected art historical topic.

Prerequisite(s): ARTH 70A and ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 182A - Art of the Americas

3 unit(s)

A survey of architecture, ceramics, metalwork, sculpture, painting and textiles of North, South, and Meso American cultures.

Prerequisite(s): ARTH 70A or instructor consent.

Grading: Letter Graded

ARTH 182B - American Art

3 unit(s)

From the Colonial Period to 1940. Social context of America.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ARTH 183A - Art of Egypt and Mesopotamia

3 unit(s)

The Arts of Egypt, Sumer, Akkad, Babylonia, Assyria, Anatolia, Hittites, and Persia (Elamite to Sassanian).

Prerequisite(s): ARTH 70A or instructor consent.

Grading: Letter Graded

Cross-listed with MDES 183A. Art and Art History is responsible for scheduling.

ARTH 185 - Art of the Classical World

3 unit(s)

Focus on the ancient arts of Greece, Roman and Etruria from the 8th century BC through the 4th century AD. Major monuments: Parthenon, Altar of Zeus at Pergamon, Ara Pacis and Forum of Trajan.

Prerequisite(s): ARTH 70A or instructor consent.

Grading: Letter Graded

ARTH 186 - Medieval Art

3 unit(s)

Introductory survey of art and architecture from from the end of the Western Roman Empire, circa 500 AD to the beginning of the Italian Renaissance, circa 1400 AD. Focuses on the meanings and uses of art and architecture within their specific historical and cultural contexts.

Grading: Letter Graded

ARTH 187A - Art of the Italian Renaissance, Fifteenth Century

3 unit(s)

Early Renaissance art and architecture. Masaccio, Botticelli, Brunelleschi and Donatello.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 187B - Art of the Italian Renaissance, Sixteenth Century

3 unit(s)

High Renaissance and Mannerism in Italy. Leonardo, Michelangelo, Raphael and Titian.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 187C - The Art of Renaissance Venice

3 unit(s)

A study of Venetian art and its urban ideology, 11th through 18th century, emphasizing the great painters and architects of the Renaissance (Carpaccio, Bellini, Titian, Tintoretto and Veronese, Mauro Codussi, Sansovino and Palladio).

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 188A - Northern Renaissance Fourteenth and Fifteenth Centuries

3 unit(s)

Survey of art of Netherlands, France and Bohemia from mid-fourteenth through fifteenth century. Principal artists covered include the Limbourg Brothers, Van Eyck, Van der Weyden, Memling and Fouquet. Emphasis on northern painting, manuscripts, tapestry traditions, iconography and social history of northern European art.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 188B - Northern Renaissance, Sixteenth Century

3 unit(s)

Survey of fifteenth and sixteenth century art of Netherlands, France and Germany. Principal artists covered include Bosch, Durer, Grunewald, Holbein and Bruegel. Emphasis on northern painting, printmaking traditions, iconography, social history of northern European art.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 189A - Baroque Art and Architecture in Europe

3 unit(s)

The art and architecture of Europe in the late 16th and 17th centuries. Broad trends and issues; artists such as Caravaggio, Bernini, Borromini, Vermeer, Rembrandt, Poussin, Mansart, Velazquez.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 189B - Global Baroque Art and Architecture

3 unit(s)

Art and architecture in the empires of Spain, Portugal and the Netherlands with a focus on painting, sculpture, and architecture, including the ways in which these artworks and artists circulated globally.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 190A - Art of the Nineteenth Century

3 unit(s)

Western Europe from Neoclassicism through Post-Impressionism including David, Delacroix, Goya, Manet, Monet, Cassatt, Cezanne, Van Gogh and Gauguin.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 190B - Early Modernist Art

3 unit(s)

Critical investigation of modern art from the 1880's (Post Impressionism) to World War I with an emphasis on painting and sculpture with some attention paid to architecture, photography, printmaking and design.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 190C - 20th Century Art: from Dada to Pop

3 unit(s)

Critical investigation of modernist art from World War I to the 1960s (from Dada to Pop art) with an emphasis on painting and sculpture but some attention paid to architecture, photography, printmaking and design.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 190D - German Art, 1800-2000

3 unit(s)

This course is an upper-division survey of historical figures, movements and developments in German art, architecture, aesthetics and design from the late Enlightenment to the present era.

Prerequisite(s): ARTH 70B or completion of Area Z or instructor consent

Grading: Letter Graded

ARTH 191A - Issues in Contemporary Art

3 unit(s)

A critical investigation of a theme which bears on the arts from mid-century to the present, looking closely at major artists and trends in order to understand their philosophies, objectives, styles, and contexts. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ARTH 70B.

Grading: Letter Graded

ARTH 191B - Women in Art

3 unit(s)

Contributions made to Western culture by women involved in the arts from the Middle Ages to the present and the influence on art of attitudes held about women.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

ARTH 191C - Contemporary Art in Mexico, the U.S., and Latin America

3 unit(s)

Contemporary Art in Mexico, the U.S., and Latin America. Includes Mexican modernism, social movements of post-revolutionary Mexico (1910-1940), and works influenced by the Chicano Civil Rights Movement (El Movimiento) in the United States (1960s-1990s) up to the present day.

Prerequisite(s): ARTH 70B or completion of Area Z or instructor consent

Grading: Letter Graded

ARTH 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ARTH 192A - Modern Design

3 unit(s)

History of design philosophy and practice from the Industrial Revolution to the present including Art Nouveau and Art Deco, the Bauhaus, International Style, Functionalism vs. Formalism, Post-Modern and Deconstructivism.

Prerequisite(s): ARTH 72, completion of Writing in the Disciplines (WID) course, or instructor consent.

Grading: Letter Graded

ARTH 192C - History of Interior Design

3 unit(s)

Survey of interior design through historical, political, social, economic, technological, and aesthetic factors that shape the built environment. Design will be analyzed formally and through parallel developments in the arts.

Prerequisite(s): ARTH 70B or ARTH 72, completion of Writing in the Disciplines (WID) course, or instructor consent.

Grading: Letter Graded

Cross-listed with DSIT 192C. Art and Art History is responsible for scheduling.
Sustainability Related - SDG 12: Responsible Consumption and Production

ARTH 193A - Worlds of Art and Culture

3 unit(s)

Focuses on the use of art images as primary sources for the study of cultural development in a globalized context and ways in which past cultures and their interactions influence the modern world.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

ARTH 193B - East Meets West in Art

3 unit(s)

Comparative study of Eastern and Western art. Emphasis on cross-fertilization. Historical and cultural backgrounds. Includes lectures, discussions and presentations. Research or art project and paper required.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ASIA 193B. Art and Art History is responsible for scheduling.

ARTH 194A - Art of China

3 unit(s)

Architecture, sculpture and painting in China from prehistoric times to the Republic.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 194A. Art and Art History is responsible for scheduling.

ARTH 195 - Art of Japan

3 unit(s)

Architecture, sculpture and painting in Japan from prehistoric times to Edo era.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 195. Art and Art History is responsible for scheduling.

ARTH 199 - Art History Capstone Seminar

3 unit(s)

This seminar explores art history as an academic discipline. Topics include: discovering subfields within art history; constructing art historical arguments; and the methods and practices of art history.

Prerequisite(s): ARTH 70A or ARTH 70C; ARTH 70B; ART 100W.

Grading: Letter Graded

ARTH 272 - Seminar in Renaissance Art

3 unit(s)

Directed group research in area of European art history of Renaissance period on topic designated by instructor. Research project required. Course is repeatable for up to 9 units of credit when course topic changes.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): At least two upper division art history courses or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ARTH 273 - Seminar in Baroque Art

3 unit(s)

Directed group research in area of European or Latin American art history of Baroque period on topic designated by instructor. Research projects required. Course is repeatable for up to 9 units of credit when course topic changes.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): At least two upper division art history courses or instructor consent.

Grading: Letter Graded

ARTH 274 - Seminar in Nineteenth Century Art

3 unit(s)

Directed group research in area of European or American art of nineteenth century on topic designated by instructor. Research projects required. Course is repeatable for up to 9 units of credit when course topic changes.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): At least two upper division art history courses or instructor consent.

Grading: Letter Graded

ARTH 275 - Seminar in Twentieth Century Art

3 unit(s)

Directed group research in area of European or American art of twentieth century on topic designated by

instructor. Research projects required. Course is repeatable for up to 9 units of credit when course topic changes.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): At least two upper division art history courses or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ARTH 277 - Seminar in Historiography

3 unit(s)

Directed group research in theories and methodologies of art history. Research projects required. Course is repeatable for up to 9 units of credit when course topic changes.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): At least two upper division art history courses or instructor consent.

Grading: Letter Graded

ARTH 291 - Graduate Problems in Art History

3 unit(s)

Independent studies on a focused research project.

Grading: Letter Graded

ARTH 298 - Master's Project

3 unit(s)

Advanced problems in research. Course may be repeated for a total of 6 units.

Course may be repeated for a total of 6 units.

Prerequisite(s): Advancement to candidacy for the Master's degree in Art.

Grading: Credit/No Credit/RP.

ARTH 299 - Master's Thesis

3 unit(s)

Advanced problems in research. Course may be repeated for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Advancement to candidacy for the master's degree in art.

Grading: Credit/No Credit/RP

ARTH 1290R - Culminating Experience Supervision

1 unit(s)

This course satisfies the requirement that all graduate students must remain enrolled during semesters in which they are working solely on their theses or projects, for which they have previously received but not cleared an RP grade.

Course may be repeated for credit for up to 20 units.

Prerequisite(s): Existing RP grade in a graduate-level thesis or project course

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Asian American Studies

AAS 1 - Introduction to Asian American Studies

3 unit(s)

Introductory examination of Asian Pacific Islander Desi/Americans (APID/A) through U.S.-national and transnational frameworks, concerned with contests over the production of racial knowledge, power, and citizenship and belonging. Develops an account of racialization beyond the black-white binary in the context of US war and empire in Asia and the Pacific Islands, settler colonialism, globalization, migration, and popular culture.

Satisfies F: Ethnic Studies.

Grading: Letter Graded

AAS 25 - The Changing Majority: Power and Ethnicity in America

3 unit(s)

Comparative and historical analysis of racial minorities. Focus on Euro American response to American Indians, Asian Americans, African Americans and Mexican Americans to provide understanding of minority experience in the U.S. as well as American culture.

Satisfies F: Ethnic Studies.

Grading: Letter Graded

Cross-listed with AFAM 25 / CCS 25. Chicana Chicano Studies is responsible for scheduling.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

AAS 33A - Asian Americans in U.S. History I

3 unit(s)

Historical and political processes shaping U.S. culture, institutions and society from before European expansion to the Civil War. Focus on the roles of workers, immigrants, and people of color from a comparative perspective.

Satisfies D: Social Sciences.

Grading: Letter Graded

Note(s): Must complete the entire sequence (AAS 33A and AAS 33B) to satisfy American Institutions (US123).

AAS 33B - Asian Americans in U.S. History II

3 unit(s)

Historical and political factors that shaped U.S. culture, institutions and society from the mid-nineteenth century to the current era. Focus on experiences of Asian Americans as well as other immigrants and people of color.

Satisfies D + US123: Social Sciences and American Institutions.

Grading: Letter Graded

Note(s): Must complete the entire sequence (AAS 33A and 33B) to satisfy American Institutions (US123).

AAS 125 - Filipino Experience in the United States

3 unit(s)

Filipinos in the United States beginning with immigration and culminating with analysis of past and contemporary issues facing Filipino Americans.

Grading: Letter Graded

AAS 158 - Asian American Intersections

3 unit(s)

Intermediate, breadth-focused study of how Asian American experiences overlap with other axes of social differentiation such as gender, sexuality, class, citizenship, ability, and/or religion. Focus may differ by instructor.

Prerequisite(s): AAS 1 or AAS 33B; Upper-division standing, or instructor consent.

Grading: Letter Graded.

AAS 159 - Asian American Media Representation and Popular Culture

3 unit(s)

Considers how popular culture provides us with the scripts to practice femininities, masculinities, and sexualities, and how these practices are infused with race and class. Examines how we exchange knowledge about race and gender through popular culture. Includes a historical survey of Asian American popular representation, beginning with ideas of orientalism and colonialism and concluding with the current digital age. Reviews how changing political, social, and cultural discourses have affected Asian American participation in media production, and how these forces have shaped media representations of Asians. Discusses the influence of form, content, funding, and circumstances of production on how these films, videos, and digital media works came to be.

Satisfies F: Ethnic Studies.

Grading: Letter Graded

Note(s): While this course is open to all undergraduate students including freshmen, this is an upper division course best suited for sophomore, junior or senior level students.

AAS 170 - Special Topics in Asian American Studies

3 unit(s)

Focus varies each semester and is announced in the schedule of classes. Repeatable for credit with program coordinator approval.

Grading: Letter Graded

AAS 175 - Asian American Communities

3 unit(s)

Asian American demography, institutions and contemporary issues.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

AAS 180 - Individual Studies

1-4 unit(s)

Individual study and research.

Prerequisite(s): Not available to Open University Students.

Grading: Credit/No Credit

AAS 184 - Ethnic Studies Theory

3 unit(s)

Intermediate to advanced study of theories foundational to critical/comparative ethnic studies and Asian American studies as a scholarly field. Emphasis on analyzing systems and structural conditions of racism and dispossession that connect Asian Americans to Black, Indigenous, and other communities of color.

Prerequisite(s): AAS 1 and AAS 33B.

Grading: Letter Graded.

AAS 185 - Ethnic Studies Methodologies

3 unit(s)

Examination of historical and sociocultural perspectives of American ethnic and racial minorities in relation to knowledge production and research. Theoretical and methodological approaches to study of power and American ethnic and racial minorities.

Prerequisite(s): Upper division or Graduate/PBAC standing.

Grading: Letter Graded.

AAS 186 - Southeast Asian Diaspora in the US

3 unit(s)

Introduction to the field of critical refugee studies and Southeast Asian American studies. Focuses on the diasporic movements of people due to the Wars in Southeast Asia, popularly known as the "Vietnam War". Analyzes war, empire, militarism, and humanitarianism to better conceptualize a refugee epistemology. Examines how particular refugee subjects - Vietnamese, Cambodian, Lao, Hmong - negotiate their refugee status and stories via memory and cultural production.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

AAS 190 - Internship

1-4 unit(s)

On-site experience with an Asian American community organization. Regular class meetings scheduled to discuss knowledge, skills and ideas related to the internship experience. Repeatable for credit with program coordinator approval.

Prerequisite(s): AAS 33B or instructor consent.

Grading: Credit/No Credit

AAS 192 - History of Japanese Americans

3 unit(s)

The Japanese in America from approximately 1800. Includes relocation, wartime conditions, post-war history and contemporary situations.

Grading: Letter Graded

Asian Studies

ASIA 19 - Music in World Cultures

3 unit(s)

Introduction to music in various cultural contexts outside European classical tradition. Live performances, film, video tapes and slides. Projects involving related arts encouraged.

Satisfies C1: Arts.

Grading: Letter Graded

Cross-listed with MUSC 19. Music is responsible for scheduling.

ASIA 70C - Arts of Asia

3 unit(s)

Major trends in the art of China, India and Japan, as well as Southeast and Central Asia and Korea, from the Neolithic period to the twentieth century.

Satisfies C1: Arts.

Grading: Letter Graded

Cross-listed with ARTH 70C. Art and Art History is responsible for scheduling.

ASIA 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Letter Graded

Humanities is responsible for scheduling.

ASIA 102 - Chinese Culture

4 unit(s)

Traditional Chinese culture in light of contemporary values. Ideographs, folk tales, festivals, creeds and customs, myths and superstitions, opera and the arts, women, the art of living.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): Taught in English.

Cross-listed with CHIN 102. World Languages and Literatures is responsible for scheduling.

ASIA 104 - Asian Philosophy

3 unit(s)

Philosophical examination of Confucianism, Daoism, Buddhism and some other significant movements of thought originated in Asia. Comparison with Western philosophy.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with PHIL 104 / RELS 104. Philosophy is responsible for scheduling.

ASIA 109A - History of China

4 unit(s)

Traditional society from earliest times to 1800.

Prerequisite(s): Upper Division Standing
Grading: Letter Graded

Cross-listed with HIST 109A. History is responsible for scheduling.

ASIA 109B - History of China

4 unit(s)

China's revolutions and ongoing modernization.

Prerequisite(s): Upper division standing or instructor consent.
Grading: Letter Graded

Cross-listed with HIST 109B. History is responsible for scheduling.

ASIA 110A - History of Japan

4 unit(s)

Development of state and society from prehistoric times to 1750. Major topics include the controversy over the origins of the Japanese people; the adaptation of Chinese cultural, religious, and political models; the role of the emperor in state formation; the classical era of Japanese culture during the Heian period; the rise of the samurai elites; and the development of military rule under the shoguns.

Prerequisite(s): Upper division standing or consent of instructor.
Grading: Letter Graded

Cross-listed with HIST 110A. History is responsible for scheduling.

ASIA 110B - History of Japan

4 unit(s)

Since 1750 emphasizing the process of modernization.

Prerequisite(s): Upper division standing or instructor consent.
Grading: Letter Graded

Cross-listed with HIST 110B. History is responsible for scheduling.

ASIA 114 - Legacy of Asia

3 unit(s)

Interdisciplinary focus on continuity and change in China and India as these ancient civilizations responded to challenges throughout their history.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.
Grading: Letter Graded

Cross-listed with ANTH 114 / HUM 114 / RELS 114. Humanities is responsible for scheduling.

ASIA 115 - The Emerging Global Culture

3 unit(s)

Introduction to systems concepts and approach as a way to investigate the global impacts of industrial technology on political, economic, social and moral/psychological structures of humankind.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ANTH 115. Anthropology is responsible for scheduling.

Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

ASIA 122 - English as a World Language

3 unit(s)

A survey of the ways and the purposes which English is used in diverse societies and cultures around the world, including the United States; implications for international and cross-cultural communication.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with LING 122. Linguistics and Language Development is responsible for scheduling.

ASIA 133B - Relationship Marketing: Pacific Rim

3 unit(s)

Why not use PacRim marketing methods in PacRim markets? Americans tend to be short-term, sales-oriented. Asians tend to be relationship oriented. Why not master both marketing methods? Focus: Launching a "start-up". Topics: PacRim forms of product-launch, sales presentation, negotiation, promotion, PacRim risks.

Prerequisite(s): BUS2 130.

Grading: Letter Graded

Cross-listed with BUS2 133B. Marketing is responsible for scheduling.

ASIA 140 - Chinese Culture and Politics Through Literature

3 unit(s)

Exploration of the interaction between culture, politics and literature as reflected in the contemporary (post-1949) narrative, poetry and drama of China, Taiwan and Hong Kong.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Taught in English.

Cross-listed with CHIN 140. World Languages and Literatures is responsible for scheduling.

ASIA 142 - Contemporary Buddhism and its Roots

3 unit(s)

Teachings of Gautama, the Buddha and ways in which those teachings were modified in forms of Buddhism that followed: Theravada in southeast Asia and Mahayana in East Asia.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with HUM 142 / RELS 142. Humanities is responsible for scheduling.

ASIA 144 - Chinese Traditions

3 unit(s)

Religious thought and practice of China's three Great Traditions (Buddhism, Taoism and Confucianism) as well as China's Little Tradition (Chinese folk religion). The role of these traditions within traditional Chinese culture and their relevance to the modern world, including China.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with HUM 144 / RELS 144. Humanities is responsible for scheduling.

ASIA 145 - Asian Politics

4 unit(s)

Study of unfolding events in Asia. Themes include: the Asian economic 'miracle,' the implications of China's rise for international security, nuclear proliferation and terrorism, and sustainability; specifically, energy, environment and human rights.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with POLS 145. Political Science is responsible for scheduling.

Sustainability Related - SDG 7: Affordable and Clean Energy

ASIA 160 - East and South Asia

3 unit(s)

Geography of Eastern, Southeastern, and Southern Asia. Themes include environmental, historical, political, and economic geographies at the scales of the region, its countries, and selected cities. Particular emphasis

is given to comparing and analyzing the variable rates of economic progress across the region.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with GEOG 160. Geology is responsible for scheduling.

Sustainability Related - SDG 15: Life on Land

ASIA 177 - Anthropology of Asia

3 unit(s)

Sociocultural themes of selected Asia cultures. Covers cultural pluralism, intercultural contact, social organization, worldview and economic adaptations. Explores connections within the Pacific Rim, especially to the local region. Course is repeatable once for credit when different cultures are emphasized.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ANTH 177. Anthropology is responsible for scheduling.

ASIA 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Humanities and the Arts is responsible for scheduling.

ASIA 193B - East Meets West in Art

3 unit(s)

Comparative study of Eastern and Western art. Emphasis on cross-fertilization. Historical and cultural backgrounds. Includes lectures, discussions and presentations. Research or art project and paper required.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ARTH 193B. Art and Art History is responsible for scheduling.

ASIA 194A - Art of China

3 unit(s)

Architecture, sculpture and painting in China from prehistoric times to the Republic.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ARTH 194A. Art and Art History is responsible for scheduling.

ASIA 195 - Art of Japan

3 unit(s)

Architecture, sculpture and painting in Japan from prehistoric times to Edo era.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ARTH 195. Art and Art History is responsible for scheduling.

Astronomy

ASTR 10 - Descriptive Astronomy

3 unit(s)

A generally non-mathematical examination of principles, facts and logic of astronomy, emphasizing arrangement, origin and evolution of the solar system.

Satisfies B1: Physical Science.

Grading: Letter Graded

ASTR 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ASTR 101 - Modern Astronomy

3 unit(s)

A principally non-mathematical discussion of current scientific observational and theoretical understanding of the origin and evolution of stars, galaxies and the cosmos.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all

SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

ASTR 117A - Astrophysics I

3 unit(s)

Physical and observational foundations of astronomy and astrophysics. Celestial coordinates, telescopes, astronomical observations, orbital motion, physics and chemistry of planetary systems; introduction to stellar physics. Computer models and simulations may be used.

Prerequisite(s): PHYS 52 and MATH 32 or MATH 32X with a "C-" or better, or instructor consent.

Grading: Letter Graded

ASTR 117B - Astrophysics II

3 unit(s)

Physics of stellar structure and evolution; observed properties of stars; physics and chemistry of the interstellar medium; galaxies and cosmology.

Prerequisite(s): PHYS 52 and MATH 31 or MATH 31X with a "C-" or better, or instructor consent.

Grading: Letter Graded

ASTR 155 - Topics in Modern Astrophysics

3 unit(s)

Topics vary each semester and may include observational and/or computational techniques. Course is repeatable for a total of 9 units.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): PHYS 52 with a C- or better, or instructor consent.

Grading: Letter Graded.

ASTR 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Athletics (Intercollegiate)

ATH 2I - Men's Baseball

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate men's baseball including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 2S - Men's Skills Development, Baseball

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate men's baseball. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 4I - Men's Basketball

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate men's basketball including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 4S - Men's Skills Development, Basketball

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate men's basketball. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 6I - Women's Basketball

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's basketball including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 6S - Women's Skills Development, Basketball

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's basketball. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 12I - Football

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate football including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 12S - Skills Development, Football

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate football. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 14I - Men's Golf

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate men's golf including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 14S - Men's Skills Development, Golf

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate men's golf. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 16I - Women's Golf

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's golf including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 16S - Women's Skills Development, Golf

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's golf. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 20I - Women's Gymnastics

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's gymnastics including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 20S - Women's Skills Development, Gymnastics

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's gymnastics. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 26I - Women's Tennis

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's tennis including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 26S - Women's Skills Development, Tennis

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's tennis. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 30I - Men's Soccer

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate men's soccer including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 30S - Men's Skills Development, Soccer

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate men's soccer. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 32I - Softball

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate softball including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 32S - Skills Development, Softball

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate softball. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 34I - Women's Swimming

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's swimming including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 34S - Women's Skills Development, Swimming

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's swimming. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 36I - Women's Volleyball

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's volleyball including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 36S - Women's Skills Development, Volleyball

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's volleyball. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 42I - Women's Cross Country

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's cross country including drills, assignments, film study, scrimmages and competitions not to exceed

20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 42S - Women's Skill's Development, Cross Country

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's cross country. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 44I - Women's Soccer

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's soccer including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 44S - Women's Skills Development, Soccer

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's soccer. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 46I - Women's Water Polo

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's water polo including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 46S - Women's Skills Development, Water Polo

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's water polo. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 48I - Men's Cross Country

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate men's cross country including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 48S - Men's Skills Development, Cross Country

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate men's cross country. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 50I - Women's Track & Field

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate women's track & field including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 50S - Women' Skills Development, Track & Field

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate women's track & field. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 52I - Men's Water Polo

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate men's water polo including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

ATH 52S - Men's Skills Development, Water Polo

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate men's water polo. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 54I - Men's Track & Field

1 unit(s)

Activities include mental and physical skill development for successful participation in NCAA intercollegiate men's track & field including drills, assignments, film study, scrimmages and competitions not to exceed 20 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

ATH 54S - Men' Skills Development, Track & Field

1 unit(s)

Activities include sport specific fitness training and conditioning for successful participation in NCAA intercollegiate men's track & field. Approximately 8 hours per week.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

Audiology

AUD 501 - Acoustics and Instrumentation

3 unit(s)

Fundamentals of the physics of sound and techniques for measuring and analyzing sound and sound environments related to audiological practice.

Prerequisite(s): Matriculation into Doctor of Audiology Program.

Grading: Letter Graded

AUD 502 - Anatomy and Physiology

3 unit(s)

Anatomy and physiology of the auditory and vestibular systems, including outer ear, middle ear, and inner ear; embryologic origins and development of structures related to body systems.

Prerequisite(s): Matriculation into Doctor of Audiology Program.

Grading: Letter Graded

AUD 503 - Psychoacoustics

3 unit(s)

Psychoacoustic theory and methods; auditory perception in normal hearing and hearing-impaired listeners. Includes lab demonstrations and projects.

Prerequisite(s): Matriculation into Doctor of Audiology Program.

Grading: Letter Graded

AUD 504 - Audiological Assessment I

3 unit(s)

Evaluation of hearing using the standard audiological test battery (pure tone audiometrics, speech audiometry, acoustic immittance, and OAEs); differential diagnosis of hearing loss.

Prerequisite(s): Matriculation into Doctor of Audiology Program.

Grading: Letter Graded

AUD 505A - Professional Issues I

3 unit(s)

Topics related to the professional practice of audiology, including: the role of professional associations; scope of practice; code of ethics; HIPAA regulations; introduction to interprofessional practice; introduction to evidence-based practice. Clinical observations and experiences that underscore concepts will be included.

Prerequisite(s): Matriculation into the Doctor of Audiology Program.

Grading: Letter Graded.

AUD 505B - Professional Issues II

3 unit(s)

Topics related to the professional practice of audiology, including patient and family counseling; report writing; role of audiologist in the IEF/IFSP process.

Prerequisite(s): AUD 505A.

Grading: Letter Graded

AUD 505C - Professional Issues III

3 unit(s)

Interprofessional identification, diagnosis, and treatment of adults and children with hearing loss and other disabilities including seminar discussion and clinical practicum experience.

Prerequisite(s): Third year standing.

Grading: Letter Graded

AUD 505D - Professional Issues IV

2 unit(s)

Business practices in audiology, including billing and coding; practice management; interview strategies and processes for obtaining fourth year externships.

Prerequisite(s): Third year standing.

Grading: Letter Graded

AUD 505E - Professional Issues V

3 unit(s)

Cultural competency, multicultural issues.

Grading: Letter Graded

AUD 506 - Anatomy and Physiology of the Central Auditory Nervous System (CANS)

3 unit(s)

The organization and function of the central auditory nervous system (CANS), including the effects of hearing loss on brain organization. The relationship between visual/proprioceptive systems and hearing and balance also will be examined.

Prerequisite(s): AUD 502 and AUD 503.

Grading: Letter Graded

AUD 507 - Hearing Aids I

3 unit(s)

Electroacoustical characteristics of hearing aids and group amplification systems. Topics include signal processing strategies and software used by audiologists to provide audible, intelligible, and comfortable amplification. Devices used in specialized hearing aid fittings also will be examined.

Grading: Letter Graded

AUD 508 - Audiological Assessment II

3 unit(s)

Advanced concepts in tympanometry and otoacoustic emissions, and their role in the evaluation and differential diagnosis of hearing loss.

Prerequisite(s): AUD 504.

Grading: Letter Graded

AUD 509 - Practicum in Audiology

3 unit(s)

Placement in SJSU on-campus audiology clinic for supervised training in providing audiological services to the local community. May be repeated for credit.

Prerequisite(s): AUD 504 and AUD 505A.

Grading: Letter Graded

AUD 510A - Clinical Rotation in Audiology I

3 unit(s)

Supervised clinical practice in audiology at an on-campus or off-site location. Doctoral students are expected to become increasingly independent and knowledgeable about patient care with each subsequent placement.

Prerequisite(s): Successful completion of Fall and Spring year 1.

Grading: Letter Graded

AUD 510B - Clinical Rotation in Audiology II

3 unit(s)

Supervised clinical practice in audiology at an off-site location. Doctoral students are expected to become increasingly independent and knowledgeable about patient care with each subsequent placement.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 510C - Clinical Rotation in Audiology III

3 unit(s)

Supervised clinical practice in audiology at an off-site location. Doctoral students are expected to become increasingly independent and knowledgeable about patient care with each subsequent placement.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 510D - Clinical Rotation in Audiology IV

3 unit(s)

Supervised clinical practice in audiology at an off-site location. Doctoral students are expected to become increasingly independent and knowledgeable about patient care with each subsequent placement.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 510E - Clinical Rotation in Audiology V

3 unit(s)

Supervised clinical practice in audiology at an off-site location. Doctoral students are expected to become increasingly independent and knowledgeable about patient care with each subsequent placement.

Prerequisite(s): Third year standing.

Grading: Letter Graded

AUD 510F - Clinical Rotation in Audiology VI

3 unit(s)

Supervised clinical practice in audiology at an off-site location. Doctoral students are expected to become increasingly independent and knowledgeable about patient care with each subsequent placement.

Prerequisite(s): Third year standing.

Grading: Letter Graded

AUD 511 - Pediatric Audiology

3 unit(s)

Topics related to hearing loss in children, including common etiologies and syndromes; newborn hearing screening procedures; and behavioral and electrophysiological diagnostic tests.

Prerequisite(s): AUD 504.

Grading: Letter Graded

AUD 512 - Pediatric Auditory Habilitation

3 unit(s)

Topics related to the management of children diagnosed with hearing loss, including: interprofessional practices; early intervention; communication modalities; hearing aid selection, provision, orientation, and follow up; FM systems; introduction to cochlear implants; Deaf community.

Prerequisite(s): AUD 505B and AUD 507.

Grading: Letter Graded

AUD 513 - Research Methods

3 unit(s)

Design and analysis of research experiments, including the role of evidence-based practice in patient care.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Second year standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this doctoral program.

AUD 514 - Audiological Assessment III

3 unit(s)

Theoretical and applied aspects of electrophysiological testing, including: brainstem responses; middle-latency responses; and cognitive potentials.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 515 - Hearing Aids II

3 unit(s)

Selection, fitting, and verification methods for optimizing hearing aid use, satisfaction, and benefits.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 516 - Adult Auditory Rehabilitation

3 unit(s)

Topics related to the management of adults with hearing loss, including the impact of hearing loss on adults of all ages; diagnosis of handicap; communicative strategies; speechreading; individual and group therapy techniques.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 517 - Audiological Assessment IV

3 unit(s)

Theoretical and applied aspects of vestibular assessment, including the administration and interpretation of electronystagmography (ENG), rotation, and posturography.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 518 - Hearing Conservation

3 unit(s)

The effects of noise on hearing. Topics include definitions and measurement of occupational and recreational noise; changes in auditory physiology as a result of noise exposure; psychological effects of noise on function and productivity; federal and state regulations regarding workplace safety; and elements of hearing conservation programs (measurement; counseling; provision of ear protection).

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 519 - Hearing Aids III

3 unit(s)

Advanced concepts in selecting, fitting, and verification of specialized hearing devices, including cochlear implants; middle-ear implants; assistive communication technologies for individuals with hearing loss.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 521 - Medical Audiology

3 unit(s)

Pathologies of the ear and medical diagnosis and treatment; interprofessional practice in the audiological and medical community.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 522 - Tinnitus

2 unit(s)

Etiology, diagnosis, and evidence-based treatments for patients with tinnitus.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 523 - Pharmacology

1 unit(s)

Principles and applications of pharmacology for audiologists.

Prerequisite(s): Second year standing.

Grading: Letter Graded

AUD 524 - Speech Perception and Language Development

3 unit(s)

Topics include normal speech and language development; effects of hearing loss on speech and language development; specialized tests of speech recognition in quiet and noise; and central auditory processing evaluation and treatment.

Prerequisite(s): Third year standing.

Grading: Letter Graded

AUD 525 - Genetics

1 unit(s)

Applications of genetics for audiologists, including syndromes involving the auditory and vestibular systems.

Prerequisite(s): Third year standing.

Grading: Letter Graded

AUD 526A - Clinical Externship in Audiology I

3 unit(s)

Full time clinical placement in an off-site facility. Placements coordinated by the Director of Clinical

Education.

Grading: Letter Graded.

AUD 526B - Clinical Externship in Audiology II

3 unit(s)

Full time clinical placement in an off-site facility. Placements coordinated by the Director of Clinical Education.

Grading: Letter Graded.

AUD 526C - Clinical Externship in Audiology III

3 unit(s)

Full time clinical placement in an off-site facility. Placements coordinated by the Director of Clinical Education.

Prerequisite(s): Fourth year standing; Successful completion of AUD 510E, AUD 526A, and AUD 526B.

Grading: Letter Graded.

AUD 598A - Research Project

2 unit(s)

Readings and discussion of topics in preparation for doctoral student research. A research question and its justification, as well as an outline of the intended experimental process, will be finalized.

Repeated for credit for 4 times for a total of 8 units.

Prerequisite(s): Second year standing.

Grading: Credit/No Credit/RP.

AUD 598B - Research Project II

2 unit(s)

Methodology for student research projects will be finalized and IRB approval obtained, if needed.

Prerequisite(s): AUD 598A.

Grading: Credit/No Credit/RP.

AUD 598C - Research Project III

2 unit(s)

Data collection and analysis for doctoral student research projects.

Prerequisite(s): AUD 598A and AUD 598B.

Grading: Credit/No Credit/RP.

AUD 598D - Research Project IV

2 *unit(s)*

Completion of student research projects; oral presentations.

Prerequisite(s): AUD 598A, AUD 598B, and AUD 598C.

Grading: Credit/No Credit/RP.

EDAU 115 - Hearing Science

3 *unit(s)*

Anatomy, physiology and psychoacoustics of the auditory system; theories of hearing and physics of sound.

Prerequisite(s): Communicative Disorders and Sciences major and upper division standing, or instructor consent.

Grading: Letter Graded

EDAU 170 - Introduction to Audiology

3 *unit(s)*

Theory and application of the fundamentals of pure tone and speech audiometric procedures and immittance measurements for identifying hearing loss and the differential diagnosis of peripheral auditory problems.

Prerequisite(s): EDAU 115 or instructor consent.

Grading: Letter Graded

EDAU 172 - Principles of Aural Rehabilitation

3 *unit(s)*

Principles and methods of aural rehabilitation procedures in adults and children. Components include treatment of listening, visual and oral communication skills; psychosocial aspects of hearing loss.

Prerequisite(s): EDAU 115 and EDAU 170.

Grading: Letter Graded

EDAU 177 - Practicum in Audiology

1-3 *unit(s)*

Supervised clinical experience in screening, testing and treatment of children and adults with hearing impairments.

Prerequisite(s): EDAU 170 and EDAU 172, or instructor consent.

Grading: Credit/No Credit

EDAU 273 - Aural Rehabilitation

3 *unit(s)*

Aural rehabilitative services and procedures for the hearing impaired. Emphasis on governmental agencies, community services, especially for adult and geriatric populations, school programs and the professional role and responsibilities of the audiologist.

Grading: Letter Graded

EDAU 298 - Special Studies

1-3 unit(s)

Supervised study in a specific field of audiology.

Prerequisite(s): Consent of area coordinator.

Grading: Mandatory Credit/No Credit/RP

Aviation

AVIA 1 - Introduction to the Aviation Industry

3 unit(s)

Career planning, paths, and opportunities within the aviation industry. Concepts and knowledge building blocks for any aviation professional, including: history of aviation; qualifications and privileges of aviation professionals; basics of aeronautics.

Grading: Letter Graded

AVIA 2 - Private Pilot Ground

3 unit(s)

Foundational concepts of aviation studies for professional pilots. Ground course for private pilot FAA certification. Aeronautics basics, weather, visual navigation, regulations, and operational environment for conducting flights under visual flight rules.

Pre/Corequisite(s): AVIA 1

Grading: Letter Graded

AVIA 3 - Introduction to Private Pilot Part 141 Flight

2 unit(s)

This course covers the FAA requirements leading up to the award of the FAA Private Pilot Certificate. The course consists of flight training segments in an FAA-approved FAR part 141 flight training program.

Prerequisite(s): AVIA 2

Grading: Credit/No Credit

AVIA 31 - Aircraft Theory and Design

3 unit(s)

Aerodynamics and aeroelastics force. Load analysis of flight vehicles. Aircraft design optimization, material selection along with, safe-life, fail-safe and damage tolerance in design.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): AVIA 2, PHYS 2A, MATH 71 or MATH 71X.

Pre/Corequisite(s): PHYS 2B.

Grading: Letter Graded

AVIA 42 - Aircraft Systems

3 unit(s)

Operational and analytical aspects of key aircraft systems such as propulsion, flight control, electrical, and hydraulic. Reliability and maintainability concepts related to the design of aircraft systems. Emphasis is placed on general aviation aircraft.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): AVIA 1 or AVIA 2 , PHYS 2A.

Pre/Corequisite(s): PHYS 2B

Grading: Letter Graded

AVIA 43 - Propulsion Theory

3 unit(s)

Propulsion theory of piston engines. Aircraft fuel systems and components. Fundamental systems, maintainability, and reliability methods. Aviation regulations related to engines. Maintenance cycles for engines and components.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): AVIA 1 or AVIA 2 , PHYS 2A.

Pre/Corequisite(s): PHYS 2B.

Grading: Letter Graded

AVIA 62 - Instrument Pilot Ground

3 unit(s)

Flight procedures, radio navigation, air traffic control, use of instrument charts. Flight simulator exercises on instrument flight maneuvers, departure and approach procedures.

Prerequisite(s): AVIA 2.

Grading: Letter Graded

AVIA 63 - Instrument Rating Part 141 Flight

2 unit(s)

This course covers the FAA requirements leading up to the award of the FAA Instrument Rating Certificate. The course consists of 29 instrument flight training segments in an FAA approved FAR part 141 instrument flight training program.

Prerequisite(s): AVIA 3 or FAA Private Pilot Certificate, AVIA 73

Grading: Credit/No Credit

AVIA 68 - Avionics and Airborne Communication

3 unit(s)

Communications and navigation systems installed on a typical general aviation aircraft. History of avionics. Laboratory exercises will include field-testing and airworthiness evaluation.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Pre/Corequisite(s): AVIA 42.

Grading: Letter Graded

AVIA 73 - Air Traffic Control

3 unit(s)

Air Traffic Control System Structure and Communications. Current configuration and future design of the National Airspace System. Oceanic and International Air Traffic Control. Automation issues and Emerging Technologies.

Prerequisite(s): AVIA 1 or AVIA 2.

Grading: Letter Graded

AVIA 78 - Introduction to Aviation Management

3 unit(s)

History and fundamentals of aviation management. Pilot relations to Fixed Base Operators (FBOs). Overview of aviation human resources; basics of aviation maintenance and risk management. Basic financial management analysis.

Grading: Letter Graded

AVIA 91 - Aircraft Turbine Engines

3 unit(s)

A study of gas turbine fundamentals, including various gas turbine cycles, components and component efficiency, thrust, specific fuel consumption, duct flow and inlet diffuser, centrifugal and axial compressors, combustion chambers and jet nozzles for aircraft propulsion.

Prerequisite(s): AVIA 43.

Grading: Letter Graded

AVIA 110 - Aviation Weather

3 unit(s)

Introduction to meteorology with emphasis on aviation applications. Causes of weather, characteristics of common weather phenomena, and climatology. Aviation weather resources and reporting, and weather briefings in relation to visual and instrument meteorological conditions for flying.

Prerequisite(s): AVIA 73, AVIA 78

Grading: Letter Graded

AVIA 112 - Commercial Pilot Ground

3 unit(s)

Material necessary for the FAA requirements leading up to the award of the FAA Commercial Pilot Certificate. Formatted as a ground school and covers the aeronautical knowledge requirements for the Commercial Pilot Knowledge Test.

Prerequisite(s): AVIA 31, AVIA 42, and AVIA 91.

Grading: Letter Graded

AVIA 113 - Commercial Professional Pilot Part 141 Flight

2 unit(s)

This course covers the FAA requirements leading up to the award of the FAA Commercial Pilot Certificate. The course consists of 58 flight training segments in an FAA approved FAR part 141 flight training program.

Prerequisite(s): FAA Private Pilot Certificate

Corequisite(s): AVIA 112

Grading: Credit/No Credit

AVIA 114 - Certified Flight Instructor Preparation

3 unit(s)

A comprehensive ground school training course to prepare students to teach those seeking Recreational, Private, Commercial pilot certification, and to satisfactorily meet the requirements to pass the FAA Knowledge Exam FAR 61.185(a)(1) - Fundamentals of Instructing and FAR 61.185(a)(2) Flight/Ground Instructor.

Pre/Corequisite(s): AVIA 112

Grading: Letter Graded

AVIA 116 - Aircraft Multi-Engine Land Rating

1 unit(s)

Introduction to the Private and Commercial Aircraft Multi/Engine Land Airman Certification Standard (ACS) to evaluate performance. Designed to provide and prepare aviation students for an aircraft Multi-Engine Land Rating to a Private/Commercial Certificate.

Prerequisite(s): AVIA 2, AVIA 62.

Corequisite(s): AVIA 113.

Grading: Letter graded.

AVIA 128 - Aviation Safety and Security

3 unit(s)

Safety in aviation design, operation, and maintenance; hazardous materials; airport environment issues; security regulations for aviation.

Prerequisite(s): AVIA 1 or AVIA 2.

Grading: Letter Graded

Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

AVIA 129 - Aviation Cybersecurity

3 unit(s)

Fundamentals of cybersecurity and cyber risk management in aviation industry related to communication of information between aircraft and air traffic control and ground services. Impact of cyber attacks on flight data

and safety. Implementation of cyber security in aviation.

Prerequisite(s): AVIA 78, AVIA 128.

Grading: Letter graded.

AVIA 141 - Human Factors in Aviation

3 unit(s)

Effects of time zone changes, sleep disruption, drugs on pilot performance. Role of FAA inspectors, physicians, cabin attendants, unions. Cockpit crew coordination; pilot psychology; aviation safety and accident investigation. Experimental avionics.

Prerequisite(s): AVIA 73, AVIA 78

Grading: Letter Graded

AVIA 150 - Unmanned Aerial Systems

3 unit(s)

Introduction to Unmanned Aerial Systems (UAS). Overview of UAS classes and typical UAS missions. Application of sensors/payload analysis, basic design concepts, current regulations in the U.S., and mishaps examination.

Prerequisite(s): AVIA 31 or Instructor Consent

Grading: Letter Graded

AVIA 160 - Aircraft Dispatch

3 unit(s)

Students will practice actual flight preparations as an aircraft dispatcher. Preparing students for the FAA certification as an Aircraft Dispatcher. Areas of instruction to include weather, performance data, weight and balance calculations, special conditions encountered in flight planning.

Prerequisite(s): AVIA 73 and AVIA 78, or instructor consent.

Grading: Letter Graded.

AVIA 173 - Aviation Law

3 unit(s)

Law and legal issues in aviation from both a national and international perspective. Rights and responsibilities of individuals, organizations, and the aviation community. Regulations and liability pertaining to the design, manufacture, operation and maintenance of aircraft.

Prerequisite(s): AVIA 78.

Grading: Letter Graded

AVIA 176 - Airline Operations and Management

3 unit(s)

Aspects of managing air transportation companies. Integration of technical, environmental, market and regulatory considerations in the decision-making process in airline management. Future planning techniques.

Prerequisite(s): AVIA 78
Grading: Letter Graded

Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

AVIA 177 - General Aviation Operations and Management

3 unit(s)

Aspects of managing general aviation companies, such as the structure of the general aviation industry, supply and demand of products, and technical and regulatory constraints.

Prerequisite(s): AVIA 1 or AVIA 2.
Grading: Letter Graded

AVIA 178 - Airport Planning and Management

3 unit(s)

Design, planning, and management of airports in the US including airport development and airport design. Legal responsibilities as an airport manager. Issues and regulations applicable to airport planning and management.

Prerequisite(s): AVIA 78.
Grading: Letter Graded

AVIA 179 - Advanced Airport Planning and Management

3 unit(s)

Noise generation and abatement. Leasing and property management including the impact of federal regulations. Concession planning. Use of technology to increase efficiency and security in airports.

Prerequisite(s): AVIA 178.
Grading: Letter Graded

AVIA 180 - Individual Studies

1-3 unit(s)

Special topics by arrangement. Course is repeatable for a maximum of 3 units.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Aviation majors or minors after advisor consultation and department chair approval.
Grading: Credit/No Credit

AVIA 180H - Individual Studies

1-2 unit(s)

Individual honors studies by arrangement. Course is repeatable for maximum of 2 units.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): Acceptance into Aviation Honors Program.

Grading: Credit/No Credit

AVIA 190 - Senior Capstone Seminar

3 unit(s)

Current industry analysis and career development; leadership skills for an aviation professional. Aviation standard procedures. Ethical principles for Aviation. Student projects related to Aviation major.

Prerequisite(s): Graduating senior, major form completed.

Grading: Letter Graded

AVIA 192I - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

AVIA 193 - Aerodynamics

3 unit(s)

Aerodynamic forces involved in an airplane in flight. Fundamental flowing gas, incompressible and compressible flow, Bernoulli's Principles, circulation forces, boundary layer, airfoils, measurement methods, laminar and turbulent flow, force and vortex interactions.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): PHYS 2A, MATH 71 or MATH 71X, AVIA 31.

Grading: Letter Graded

AVIA 194 - Advanced Aircraft Systems

3 unit(s)

Operations of avionics as found on modern general aviation aircraft and turboprop/turbofan aircraft. Major systems used on general aviation aircraft including GPS, FMS, navigation systems, fuel systems, hydraulic systems, environmental systems, landing gear.

Prerequisite(s): AVIA 42, AVIA 43.

Grading: Letter Graded

AVIA 195 - Internship with the Aviation Industry

1-6 unit(s)

Practical experience with aviation industry under direct supervision of aviation professionals. Experience will relate to air carrier or general aviation aircraft operation/management/maintenance, fixed-based operation

management and/or airport operation/management. Course is repeatable for a maximum of 12 units.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Junior standing and instructor consent.

Grading: Credit/No Credit

AVIA 198 - Aviation and Human Civilization

3 unit(s)

Critical analysis of the role of aviation in human civilization focusing on cultures outside the US and how their development impacted US practices. Topics include: aviation early history; impact of aviation on global economy; gender disparity in the field.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

AVIA 199A - Special Topics in Aviation Management

3 unit(s)

Special topics in Aviation Management. Content varies from semester to semester. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

AVIA 199B - Special Topics in Aviation Operations

3 unit(s)

Special topics in Aviation Operations. Content varies from semester to semester. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Biological Sciences

BIOL 10 - The Living World

3 unit(s)

Provides students with an understanding of the most fundamental concepts of modern biology including ecology (the interaction between organisms and their environment), human inheritance, the structure and function of living organisms, evolution, strategies for survival and reproduction, and biotechnology.

Satisfies B2: Life Science.

Grading: Letter Graded

Note(s): Not an elective in the department majors.

Sustainability Related - SDG 15: Life on Land

BIOL 20 - Ecological Biology

3 unit(s)

Introduction to diversity, ecology, evolution and behavior. In conjunction with BIOL 21 a more complete survey of biology.

Misc/Lab: Lecture 2 hours/lab 3 hours/field trips.

Satisfies B2 + B3: Life Science & Lab.

Grading: Letter Graded

Note(s): Not an elective in the department majors.

BIOL 21 - Human Biology

3 unit(s)

Introduction to physiology, reproduction, development, heredity and aging. With BIOL 20 a more complete survey of biology.

Misc/Lab: Lecture 2 hours/Lab 3 hours.

Satisfies B2 + B3: Life Science & Lab.

Grading: Letter Graded

Note(s): Not an elective in the department majors.

BIOL 30 - Principles of Biology I

4 unit(s)

Cellular and physiological aspects of biological diversity. Concepts include: biomolecules, cellular structures/function, cell-cell communication, cellular energetics, molecular evolution, gene expression, enzymes, and animal physiological systems.

Misc/Lab: Lecture 3 hours/Lab 3 hours.

Satisfies B2 + B3: Life Science & Lab.

Prerequisite(s): Writing Enrollment Group W-I or W-II, or ENGL 1AF with a grade of CR, or ENGL 1A with a grade of C- or better; Math Enrollment Group M-I or M-II, or completion of a GE Area B4 course. Must be majoring in Biology (all), Biomedical Eng, Biochemistry, ENVS (all), Forensic Science (all), Nutritional Science, Meteorology-CS, Kinesiology, Computer Science, and Communicative Disorders.

Grading: Letter Graded

BIOL 31 - Principles of Biology II

4 unit(s)

The diversity of life and the mechanisms by which that diversity has arisen. Concepts include: scientific method, origins of life, adaptation of organisms to different environments, ecology, and evolution.

Lecture 3 hours/Lab 3 hours

Satisfies B1 + B3: Physical + Lab Science.

Prerequisite(s): BIOL 30 (with a grade of "C-" or better for all Biology majors). Must be majoring in Biology (all), Biomedical Eng, Biochemistry, Forensic Science (all), Environmental Studies (all), Nutritional Science, Meteorology - Climate Science Concentration, Kinesiology, Computer Science, and Communicative Disorders.

Grading: Letter Graded.

BIOL 54 - Human Understanding

3 unit(s)

Major issues in health and disease, learning and memory, maturation and aging (such as diet, exercise, mind-body medicine, and addictions). Emphasis on learning how to understand and apply physiologic information for personal growth and lifelong learning.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

BIOL 55 - Biostatistics

3 unit(s)

Introductory experimental design and statistical analysis of biological data from manipulated experiments. Experience in designing and analyzing experiments utilizing both univariate and multivariate tests.

Lecture 2 hours/Lab 3 hours

Prerequisite(s): BIOL 30 or BIOL 31 with a grade of C- or better, or instructor consent. Must be a declared Biology Major (all) or Environmental Studies Major (all).

Grading: Letter Graded

BIOL 65 - Human Anatomy

4 unit(s)

Introductory study of gross and microscopic human anatomy including corresponding pathology. For majors in nursing and kinesiology.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Satisfies B2 + B3: Life Science & Lab.

Grading: Letter Graded

Note(s): Not an elective in the department majors.

BIOL 65O - Human Anatomy

4 unit(s)

Introductory study of gross and microscopic human anatomy including corresponding pathology. For majors in nursing and kinesiology. This online anatomy course is not intended for students pursuing degrees in kinesiology, recreation (therapeutic recreation) or to meet the anatomy prerequisite for occupational therapy at SJSU. Students who intend to transfer the human anatomy course to another institution which requires an "in class" lab should enroll in BIOL 65.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Satisfies B2 + B3: Life Science & Lab.

Grading: Letter Graded

Note(s): Not an elective in the department majors.

BIOL 66 - Human Physiology

5 unit(s)

Explanation of physiological principles from the molecular and cellular-levels to organ systems. Neural and endocrine controls and integration among systems. Health care orientation.

Misc/Lab: Lecture 3 hours/lab 3 hours/seminar 1 hour.

Satisfies B2 + B3: Life Science & Lab.

Prerequisite(s): High school algebra. Recommended: Human Anatomy, CHEM 30A.

Grading: Letter Graded.

Note(s): Not an elective in the major departments. A grade of "C-" or better is required to earn B2 and B3 Intensive Science GE credit.

BIOL 100W - Scientific Communication Workshop

3 unit(s)

Analysis and communication of scientific research to both scientific and general audiences. Satisfies upper division writing requirement.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability + Writing in the Disciplines (WID).

Prerequisite(s): BIOL 30 and BIOL 31 (with grades of "C-" or better); A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: Biology (all).

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

BIOL 101 - Origins of Life

3 unit(s)

Process of evolution, fossil evidence for life origins, and the place of humans in nature.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Not an elective in the Biological Sciences Department majors.

BIOL 105 - Principles of Developmental Biology

3 unit(s)

Emphasis on human development. Other animal systems (fly, frog, chick, mouse) will also be studied to aid in understanding anatomical, physiological, genetic and molecular mechanisms operating during gametogenesis, fertilization, cleavage, gastrulation and organogenesis.

Prerequisite(s): BIOL 30 and BIOL 31 (with a grade of "C-" or better in each), or instructor consent; BIOL 115 (with a grade of "C" or better). Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 106 - Physiological Ecology

3 unit(s)

Study of the interaction of an organism with its environment. Looking at both plants and animals, students examine how both structure and function interact to enable an organism to survive under particular environmental conditions.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of C or better); BIOL 100W; CHEM 8 or CHEM 112A and CHEM 112B (with a grade of C- or better), upper division standing, or instructor consent. Must be a declared major in Biological Sciences; other majors with instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 15: Life on Land

BIOL 106L - Physiological Ecology Lab

1 unit(s)

Experimental labs that illustrate/demonstrate key physiological concepts of plant and animal adaptations to their environment, as discussed in the lecture section, BIOL 106 - Physiological Ecology.

3 hours lab.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of C or better); BIOL 100W; CHEM 8 or CHEM 112A and CHEM 112B (with a grade of C- or better); upper division standing, or instructor consent. Must be a declared major in Biological Sciences; other majors with instructor consent.

Corequisite(s): BIOL 106.

Grading: Letter Graded.

BIOL 107 - Immunology

3 unit(s)

Provides information about all areas of immunology with emphasis on the basic concepts of immune mechanisms of the acquired and innate immune systems. Uses the basic information to study immune disorders and the immune response to infectious agents.

Prerequisite(s): MICR 101 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 107L - Immunology Laboratory

2 unit(s)

The experiments in this beginning immunology laboratory are designed to study both the innate and acquired immune systems. Experimentation into the formation, function and detection of antibodies provides students with skills in basic immunologic techniques. Flow cytometry is used in identification of immune cells as well as functional assays of complement mediated phagocytosis.

Lab 3 hours.

Prerequisite(s): Must be a declared Biology Major (all).

Pre/Corequisite(s): BIOL 107 or instructor consent.

Grading: Letter Graded

BIOL 109 - Human Neuroanatomy and Physiology

4 unit(s)

Gross and microscopic structure and function of the human nervous system. Introduction to experimental and clinical techniques.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Prerequisite(s): BIOL 65 or instructor consent

Grading: Letter Graded

Note(s): Not an elective in the department majors.

BIOL 110 - Biodiversity and Biopolitics

3 unit(s)

Application of ecological principles to the conservation of biodiversity and the management of ecosystems. Analysis of biological, economic, social and political interrelationships involved in conservation.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Not an elective in the Biological Sciences Department majors.

Sustainability Focused - SDG 15: Life on Land

BIOL 111 - Fire Ecology

4 unit(s)

Fire is a fundamental ecological process in many terrestrial ecosystems. Examination of fire ecology and ecologically-based management of a variety of ecosystems.

Lecture 2 hours/Lab 6 hours.

Prerequisite(s): Any GE Area B1 or B2 class. Biology major (all) or Wildfire Science minor. Other majors considered with instructor consent.

Grading: Letter Graded

BIOL 113 - Principles of Systematics

3 unit(s)

Students gain the understanding and skills needed to taxonomically study biodiversity, including the use of morphological and DNA sequence characters to examine phylogeny, and use of a range of biodiversity research techniques and tools.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BOT 113 / ENT 113 / ZOOL 113. Biological Sciences is responsible for scheduling.

BIOL 114 - Functional Morphology

3 unit(s)

Develops understanding and skills needed to taxonomically study biodiversity, including the use of morphological and DNA sequence characters to examine phylogeny, and use of a range of biodiversity research techniques and tools.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BOT 114 / ENT 114 / ZOOL 114. Biological Sciences is responsible for scheduling.

BIOL 115 - General Genetics

4 unit(s)

Principles and methods of microbial, plant and animal genetics. Mendelism, cytogenetics, molecular genetics, mutation, quantitative genetics and genetic aspects of evolution.

Lecture 3 hours/Discussion 1 hour.

Prerequisite(s): BIOL 30 and BIOL 31 (with a grade of "C-" or better in each), or instructor consent; CHEM 1A and CHEM 1B (with a grade of "C" or better in each). Must be a declared Biology (all) or Chemistry (all) or Forensic Science (Biology concentration only) major.

Grading: Letter Graded

BIOL 116 - Molecular Genetics

4 unit(s)

Molecular genetics of eukaryotes. Replication, repair, mutation, regulation of gene expression, gene organization and methods of recombinant DNA research.

Prerequisite(s): BIOL 115 or MICR 166, and CHEM 135 (all with a grade of "C" or better). Must be a declared Biological Sciences BS, Molecular Biology concentration major. Other Biological Sciences majors must get instructor consent.

Corequisite(s): BIOL 116L.

Grading: Letter Graded

BIOL 116L - Molecular Genetics Laboratory

3 unit(s)

Lab experience in modern molecular biology techniques used in research and industry settings. Techniques may include nucleic acid purification, enzymatic modification of nucleic acids, recombinant DNA cloning, PCR, Quantitative PCR, bacterial transformation and culture, agarose gel electrophoresis. The techniques chosen depend upon the course instructor.

Lecture 1 hours/Lab 6 hours.

Corequisite(s): BIOL 116, and must be a declared Biological Sciences BS, Molecular Biology concentration major. Other Biological Sciences majors must get instructor consent.

Grading: Letter Graded

BIOL 117 - Human Genetics

3 unit(s)

Mendelian traits, classical and molecular cytogenetics, DNA variation, sex determination, gene mapping, mutation, population genetics, multifactorial inheritance, genetic counseling and prenatal diagnosis.

Prerequisite(s): BIOL 115 (with a grade of "C" or better). Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 118 - Evolution

4 unit(s)

An analysis of the patterns and processes of biological evolution. Topics include: history and philosophy of evolutionary thought; macroevolution and biogeography; selection, adaptation, and other forces; sexual selection and behavior; genetics, genomics, and the molecular basis of evolution.

Lecture 3 hours/Seminar 1 hour.

Prerequisite(s): BIOL 30 and BIOL 31 (with a grade of "C-" or better in each for Biology Majors). Must be a declared Biology or Chemistry Major (all).

Grading: Letter Graded

Sustainability Related - SDG 15: Life on Land

BIOL 119 - Neurogenetics

3 unit(s)

Cellular and molecular neuroscience at the neuron, synapse and circuit level, including electrical and chemical signaling. Neurophysiology of development, maintenance and modification of neural circuits. Molecular genetics of neurological disorders such as autism, schizophrenia, Alzheimer's disease, and mood disorders.

Prerequisite(s): BIOL 115 (with a grade of "C" or better). Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 122 - Bacterial Diversity

2 unit(s)

Study of the characteristics and microecology of unusual prokaryotes. Molecular and traditional approaches will be discussed.

Prerequisite(s): MICR 101 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with MICR 122. Biological Sciences is responsible for scheduling.
Sustainability Related - SDG 15: Life on Land

BIOL 122L - Bacterial Diversity Laboratory

2 unit(s)

Laboratory techniques in bacterial diversity.

6 hours Lab

Prerequisite(s): MICR 101 (with grade of "C" or better) or Instructor Consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with MICR 122L. Biological Sciences is responsible for scheduling.

BIOL 123A - Bioinformatics I

3 unit(s)

Introduction to algorithms, tools, and databases of Bioinformatics. Biological foundations: central dogma; sequence databases; pairwise alignment algorithms and tools; Blast; phylogenetics. Possible additional topics: protein structure, multiple sequence alignment, next-gen sequencing, epigenetics, CRISPR. Project applying these approaches to real-world problems.

Prerequisite(s): CS 46B or BIOL 31, or instructor consent; Allowed Majors: Computer Science, Data Science, Software Engineering, Biology, Chemistry or MS Bioinformatics.

Grading: Letter Graded

Cross-listed with CS 123A / SE 123A. Computer Science is responsible for scheduling.

BIOL 123B - Bioinformatics II

3 unit(s)

Advanced Bioinformatics algorithms, tools, databases. Biological background; protein structure/function; sequencing technology; sequence identification; transcriptomics; metagenomics; CRISPR. Possible additional topics: functional genomics; protein networks; drug discovery; pathway analysis; immunoinformatics; analysis pipelines; machine learning applications. Project applying advanced approaches to real-world problems.

Prerequisite(s): CS 123A / BIOL 123A / SE 123A; Allowed Majors: Computer Science, Data Science, Software Engineering, Biology, Chemistry or MS Bioinformatics.

Grading: Letter Graded

Cross-listed with CS 123B / SE 123B. Computer Science is responsible for scheduling.

BIOL 124 - Systems Physiology

3 unit(s)

Physiology of organ systems with emphasis on the human. Neural & hormonal communication, muscle, cardiovascular, respiratory, urinary, digestive, endocrine, and reproductive physiology.

Prerequisite(s): BIOL 115; PHYS 2A, PHYS 2B ; CHEM 112A; All courses with a "C- or better". Must be a declared Biology Major (all).

Corequisite(s): BIOL 125 highly recommended.

Grading: Letter Graded

BIOL 125 - Systems Physiology Laboratory

2 unit(s)

Selected lab units to demonstrate complex physiological mechanisms and the physiology of organ systems. Methods include animal experiments and physiological recording and stimulation.

Lab 6 hours.

Prerequisite(s): Must be a declared Biology Major (all).

Pre/Corequisite(s): BIOL 124 (with grade of "C-" or better), or instructor consent.

Grading: Letter Graded

BIOL 129 - Neuroscience

3 unit(s)

Principles of brain organization and function underlying behavior. Topics include neuroanatomy and physiology of language, vision, sexual behavior, memory and abnormal behavior.

Prerequisite(s): Either PSYC 30 and 3 units of biology, or 9 units of biology.

Grading: Letter Graded

Note(s): Not acceptable as an elective in the Biology major.

Cross-listed with PSYC 129. Psychology is responsible for scheduling.

BIOL 131 - Endocrine Physiology

3 unit(s)

Emphasis on mammalian systems. Mechanisms of hormone action, secretion and physiological effects; hormone assay techniques.

Prerequisite(s): BIOL 124 (with grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 134 - Vertebrate Histology

4 unit(s)

Light and electron microscopic structure of vertebrate tissues with consideration of related functions. Emphasis on the examination of human tissues including corresponding pathology.

Lecture 2 hours/Lab 6 hours.

Prerequisite(s): BIOL 124 (with grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 135A - Eukaryotic Cell and Molecular Biology I

3 unit(s)

First semester of a year-long cell and molecular biology course. Topics include membrane structure, signal transduction, cytoskeletal structure, cell migration, and gene expression.

Prerequisite(s): BIOL 115, CHEM 112A, CHEM 112B, and CHEM 135 (with a grade of "C" or better in each). Must be a declared Biology major.

Grading: Letter Graded

BIOL 135B - Eukaryotic Cell and Molecular Biology II

3 unit(s)

BIOL 135B is the second semester of a year-long cell and molecular biology course. Topics covered include chromosome structure and maintenance, stem cell biology, cell death, and cancer biology.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): BIOL 115; BIOL 135A; BIOL 100W (with a grade of "C" or better in each). Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 135L - Molecular Cell Biology Lab

3 unit(s)

Lab experience in nucleic acid and protein purification, enzyme assay, bacterial and mammalian cell culture, immunofluorescence, column chromatography, agarose and polyacrylamide gel electrophoresis, spectrophotometry, light microscopy, etc.

Lecture 1 hour/Lab 6 hours.

Prerequisite(s): BIOL 135A (with grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 136 - Vertebrate Neurophysiology

3 unit(s)

Review of topics from the molecular to the organismal level. Chemical and electrotonic phenomena of membranes, neurochemistry, sensory transduction, information coding, neural control, and additional rotating topics.

Prerequisite(s): BIOL 124 (with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 136L - Vertebrate Neurophysiology Laboratory

1 unit(s)

Course-based undergraduate research experience using electrophysiological techniques to study nervous system function. Topics include chemical and electrotonic phenomena of membranes, information coding, and additional rotating topics.

Lab 3 hours.

Prerequisite(s): BIOL 124 with a C- or better.

Corequisite(s): BIOL 136. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 137 - Introduction to Principles of Toxicology

3 unit(s)

Emphasis on basic principles of toxicology. Toxicity of several classes of compounds covered in depth. Focus on basic chemical principles and appropriate applications.

Course is repeatable for up to 3 units.

Prerequisite(s): BIOL 124; CHEM 112B (all with a grade of "C-" or better). Must be a declared Biology Major (all).

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

BIOL 138 - Stem Cell Biology

3 unit(s)

Topics in the growing field of stem cell biology. Topics include: properties of embryonic and adult stem cells, use of stem cells in scientific research, regulation of stem cells, and invertebrate and vertebrate models of stem cell research.

Prerequisite(s): BIOL 115 with a C or better. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 139 - Cancer Biology

3 unit(s)

Basic principles of cancer biology needed to gain an overall understanding of cellular and molecular events that lead to the formation and progression of cancer. Topics include normal and abnormal cell behaviors, the steps leading to the development of malignancy, in-depth discussions of specific cancers, such as breast, colon, and myeloid leukemias, and the development of diagnostic tools and therapies.

Prerequisite(s): BIOL 115 with a C or better, or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 140 - Human Sexuality

3 unit(s)

Biological and sociocultural facets of human sexuality. Evolution and physiology of sex, reproductive biology/ethics and cross-cultural expression of sexual behavior.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Not acceptable as an elective in the Biology major.

Cross-listed with ANTH 140 / PH 140. Anthropology is responsible for scheduling.

BIOL 142 - Paleontology

4 unit(s)

Study of the major groups of invertebrate and vertebrate fossils and their use in the study of geology, paleoecology, and macroevolution.

Lecture 3 hours/lab 3 hours and field trips.

Prerequisite(s): GEOL 1 and GEOL 7, or instructor consent.

Grading: Letter Graded

Cross-listed with GEOL 142. Geology is responsible for scheduling.

BIOL 143 - Biogeography

3 unit(s)

Examination of the patterns of biodiversity over space and through time. Using data and models from a variety of sources including botany, zoology, ecology, evolutionary biology, paleontology, and geology, effects of isolation, elevation, and latitude are examined to understand spatial patterns of biodiversity.

Prerequisite(s): BIOL 31 or equivalent (with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BOT 143 / ENT 143 / ZOOL 143. Biological Sciences is responsible for scheduling.
Sustainability Related

BIOL 145 - Advanced Undergraduate Biology Seminar

1-3 unit(s)

Undergraduate Seminar in Biology. May be taken concurrently with BIOL 145L.

Course is repeatable when content changes for up to 12 units.

Prerequisite(s): Completion of 9 units of upper division major coursework, or instructor consent. Must be a declared Biology Major.

Grading: Letter Graded

BIOL 145L - Advanced Undergraduate Biology Lab

1-2 unit(s)

Advanced undergraduate laboratory or field experience. May be taken concurrently with BIOL 145. Course is repeatable for credit when content changes.

3 hours lab.

Course is repeatable for up to 12 units.

Prerequisite(s): Completion of nine (9) units of upper division majors' coursework. Instructor Consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 148 - Molecular Ecology

4 unit(s)

Applying molecular genetics approaches to ecological questions. Topics include: population genetics/genomics, landscape genetics/genomics, conservation genetics/genomics, non-invasive sampling, eDNA, etc. Lab section includes experience in modern molecular biology techniques.

Lecture 2 hours/Lab 6 hours.

Prerequisite(s): BIOL 118 with a grade of C or better is required. Must be a declared major in Biological Sciences; other majors with instructor consent.

Grading: Letter Graded.

BIOL 150 - Field Studies in Natural History

1-2 unit(s)

Field courses given on site, typically covering general ecology, botany, geology, zoology and specialized natural areas such as Baja California, Death Valley, seacoasts and mountains. Repeatable for up to a total of 3 units of credit when location or content changes.

Satisfies B3: Laboratory Science.

Grading: Letter Graded

Note(s): Not an elective in the department majors.

Cross-listed with GEOL 150. Biological Sciences is responsible for scheduling.
Sustainability Related - SDG 15: Life on Land

BIOL 155 - Hypothesis Testing

3 unit(s)

Experimental design and statistical analysis of biological data from manipulative experiments. Experience in designing and analyzing experiments using t-tests, 1- and 2-way ANOVA, Randomized Block ANOVA, Nested ANOVA, Linear Regression and Tests of Independence.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 30 and BIOL 31 (with grade of "C-" or better), or instructor consent. Must be a declared Biology or Environmental Studies Major (all).

Grading: Letter Graded

BIOL 156 - Ecological Sampling Design and Analyses

3 unit(s)

Sampling design and statistical analysis of biological patterns. In this course, students design and execute a field experiment (one required weekend field trip) that incorporates multivariate measurements. Students analyze the data with Log Linear analysis, Logistic Regression, Principal Components Analysis, Canonical Correlation and various Regression techniques.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 31 (with a grade of "C-" or better). Must be a declared Biology or Environmental Studies major; other majors with instructor consent.

Grading: Letter Graded

BIOL 159 - Integrative Biology

3 unit(s)

Capstone course in the BA Biological Science degree. Critical reading of scientific literature, experimental design and scientific communication skills will be emphasized. Topics covered may vary for a given semester.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Senior standing, completion of A3, ENGL 1B, or equivalent with a C- or better; BIOL 115 or BIOL 118; BIOL 55 or BIOL 155, (all with grade of "C" or better). Allowed Declared Majors: BIOL majors only.

Grading: Letter Graded

BIOL 160 - Ecology

4 unit(s)

Factors that influence the distribution and abundance of organisms; some aspects of applied ecology.

Lecture 3 hours/Lab 3 hours.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability for Biology Majors only.

Prerequisite(s): BIOL 113 (with a grade of "C or better"); Allowed Declared Majors (Biology, Natural Science); Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Pre/Corequisite(s): BIOL 55 or BIOL 155 or BIOL 156 or equivalent Biostatistics course, or instructor consent.

Grading: Letter Graded.

Cross-listed with BOT 160. Biological Sciences is responsible for scheduling.

Sustainability Focused

BIOL 161 - Introduction to Marine Ecology

4 unit(s)

Introduction to the major ecological processes that determine the structure and diversity of species assemblages in marine and estuarine environments through field-oriented activities.

Lecture 2 hours/Lab 6 hours.

Prerequisite(s): BIOL 118 with a grade of C or better AND BIOL 155 or BIOL 156 with a grade of C- or better. Must be a declared major in Biological Sciences; other majors with instructor consent.

Grading: Letter Graded.

BIOL 162 - Marine Biology and Oceanography

4 unit(s)

(Formerly as Introduction to Biological Oceanography) Introduction to the major physical, chemical, ecological, and biological processes, including human influences, that govern life in marine environments.

Lecture 2 hours, Lab 6 hours.

Prerequisite(s): BIOL 31 with a C- or better. Must be a declared major in Biological Sciences; other majors with instructor consent.

Pre/Corequisite(s): BIOL 115 or BIOL 118 with a grade of C or better.

Grading: Letter Graded.

BIOL 163 - Conservation Biology

3 unit(s)

Principles of conservation biology, including management for the preservation of biodiversity and maintenance of viable populations. Examples from plants and animals

Prerequisite(s): BIOL 115 or BIOL 118 (with grade of "C" or better), or instructor consent. Must be a declared major in Biological Sciences; other majors with instructor consent.

Grading: Letter Graded.

Sustainability Focused - SDG 15: Life on Land

BIOL 164 - Ecological Field Methods

3 unit(s)

Techniques for evaluating and managing the abundance and diversity of plants and animals.

Lecture 1 hour/Lab 6 hours.

Prerequisite(s): BIOL 113 or (with a grade of "C" or better), or instructor consent. Must be a declared major in Biological Sciences.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

BIOL 165 - Advanced Human Anatomy

4 unit(s)

Study of human anatomy, including clinical correlations, for pre-professional students. Not open to student who have completed BIOL 65.

Lecture 2 hours/Lab 6 hours.

Prerequisite(s): BIOL 30, BIOL 31 and BIOL 115 (all with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 167 - Cardiorespiratory Physiology

3 unit(s)

Covers the normal anatomy and physiology of the cardiovascular and respiratory systems, as well as how they function following perturbations in homeostasis. Focuses on the mammalian system with some discussion of comparative physiology.

Prerequisite(s): BIOL 124 (with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 168 - Reproductive Physiology

3 unit(s)

Reproductive Physiology covers the anatomy and physiology of the reproductive system, as well as how deviations from the norm affect reproduction. Course focuses on the mammalian system with discussion of comparative physiology.

Prerequisite(s): BIOL 124 (with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 170 - Cellular and Molecular Physiology

3 unit(s)

Introduction to the structure and physiological function of cells. Topics include synthesis of cellular macromolecules such as DNA, RNA and proteins; internal cellular organization; biochemical reactions necessary for cell growth, death and cellular communication. Relevant pathophysiology examples of cellular dysfunction are presented.

Prerequisite(s): BIOL 124 (with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 177 - Physiology for Engineers

3 unit(s)

Structure and function of physiological systems and discussion of topics of particular importance to the design, development, construction and clinical application of biomedical devices. Practical laboratory application of technologies to monitor, repair, replace or augment physiological systems.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 30, CHEM 1B, PHYS 50

Grading: Letter Graded

Cross-listed with BME 177. Biomedical Engineering is responsible for scheduling.

BIOL 178 - Integrative Physiology

3 unit(s)

Integrative Physiology is the capstone course in the Systems Physiology concentration. The specific physiology topics covered may vary depending on the semester. Critical reading of scientific literature, experimental design and scientific communication skills will be emphasized.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability for Biology Majors only.

Prerequisite(s): BIOL 100W, BIOL 115, BIOL 124 at least one upper division systems physiology elective (all with a grade of "C-" or better); completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Must be a declared Biology Major (all).

Grading: Letter Graded.

BIOL 180 - Individual Studies

1-4 unit(s)

Undergraduate advanced lab or field work in special fields.

Repeatable for credit.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all). Not available to Open University Students.

Grading: Credit/No Credit

BIOL 181 - Introduction to Health Care

1-3 unit(s)

Participation and observation with a medical doctor, dentist, optometrist, pharmacist, or veterinarian in private practice, hospital or retail setting.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all). Not available to Open University Students.

Grading: Credit/No Credit

Note(s): Hepatitis B or other vaccinations may be required in some settings.

BIOL 182 - Tutor Assistant in Biology

1-2 unit(s)

Supervised classroom or field experience as a tutor-assistant in experiments, demonstrations and discussion. Course may be repeated for credit.

Repeatable for credit.

Prerequisite(s): Sophomore or Upper division standing, instructor consent and appropriate academic background. Not available to Open University Students. Must be a declared Biology Major (all).

Grading: Credit/No Credit

BIOL 184 - Directed Reading

1-4 unit(s)

Assigned readings of selected books, journals and papers chosen to fill gaps in training or for contact with new fields. Evaluation through weekly reports and conferences.

Repeatable for credit.

Prerequisite(s): Instructor consent. Not available to Open University Students. Must be a declared Biology Major (all).

Grading: Credit/No Credit

BIOL 186 - Senior Thesis

2-4 unit(s)

Advanced library, laboratory or field research under the supervision of a faculty member, culminating in a senior thesis.

Prerequisite(s): Instructor consent. Not available to Open University Students. Must be a declared Biology Major (all).

Grading: Credit/No Credit

BIOL 190 - Field Studies in Biology

1-4 unit(s)

Field program involving planning and execution of a project. Course is repeatable for a maximum of 12 units.

Course is repeatable for up to 12 units.

Prerequisite(s): Instructor consent. Not available to Open University Students. Must be a declared Biology Major (all).

Grading: Credit/No Credit

Sustainability Related - SDG 15: Life on Land

BIOL 198 - Undergraduate Research

0.5-4 unit(s)

Field or laboratory biological research under the direction of a faculty member.

Course is repeatable for up to 8 units.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

BIOL 201 - Graduate Seminar in Biological Sciences

1 unit(s)

Seminar designed to introduce principles and topics in biological research. Mandatory during first semester of enrollment.

Course may be repeated for credit for up to 4 units.

Grading: Letter Graded

BIOL 202 - Graduate Studies in Biology

3 unit(s)

A seminar on current research and theory in the life sciences, emphasizing scientific writing and formal oral presentations.

Lecture/seminar/discussion 5 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

BIOL 202TA - Biotech Seminar: Biotech Products

3 unit(s)

Seminar course in which students develop professional skills in writing, speaking, literature review, and critical thinking. Assignments are targeted at developing expertise and knowledge useful in the biotechnology industry. Focuses on biotechnology products.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Enrollment in the Master of Biotechnology Program.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

BIOL 202TB - Biotech Seminar: Drug Development Process

3 unit(s)

Seminar course in which students develop their professional skills. Assignments are targeted at developing expertise and knowledge useful in the biotechnology industry. Focuses on the development of drugs and other biotechnology products.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Enrollment in the Master of Biotechnology Program.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

BIOL 202TC - Biotech Seminar: Biotech Business I

2 unit(s)

BIOL 202TC is a seminar course in which students develop their professional skills. Assignments are targeted at developing expertise and knowledge useful in the biotechnology and pharmaceutical industries. BIOL 202TC focuses on the financial aspects of business development in biotechnology.

Prerequisite(s): Enrollment in the Master of Biotechnology Program.

Grading: Letter Graded

BIOL 202TD - Biotech Seminar: Biotech Business II

2 unit(s)

Seminar course in which students develop their professional skills. Assignments target developing expertise and knowledge useful in the biotechnology and pharmaceutical industries. Focuses on business development in biotechnology and a team project in which students develop a business plan.

Prerequisite(s): BIOL 202TC or instructor consent

Grading: Letter Graded

BIOL 203 - Biology Teaching Forum

3 unit(s)

Introduction to effective methods for teaching undergraduate biology laboratories, activities, seminars and/or lectures. Emphasis on pedagogy and application of best practices and strategies for teaching biology to a diverse audience. Course administration, student conduct and expectations, and assessment will also be covered.

Prerequisite(s): graduate standing or instructor consent

Grading: Letter Graded

BIOL 205 - Advanced Molecular Techniques

4 unit(s)

Emphasizes the laboratory techniques of modern molecular biology. Depending on instructor, focus will be on animal, plant, yeast, bacterial or viral systems. Course is repeatable for credit if content changes.

Misc/Lab: Lecture 2 hours/lab 6 hours.

Prerequisite(s): BIOL 135L or instructor consent.

Grading: Letter Graded

BIOL 205T - Advanced Molecular Techniques for Biotechnology

4 unit(s)

Emphasizes the laboratory techniques of modern molecular biology especially: report writing and communication of research results. Depending on instructor, focus will be on animal, plant, yeast, bacterial, or viral systems.

Misc/Lab: Lecture 2 hours/lab 6 hours.

Prerequisite(s): BIOL 135L and admission into the Master of Biotechnology program.

Grading: Letter Graded

BIOL 215 - Seminar in Advanced Genetics

3 unit(s)

Selected topics of current interest in advanced genetics. Each semester will emphasize a particular field of genetics; e.g., molecular genetics, human genetics, developmental genetics, population genetics, etc.

Grading: Letter Graded

BIOL 218 - Advanced Evolution

3 unit(s)

Integrated use of modern molecular techniques and classical evolutionary theory to address a broad array of questions in evolutionary biology.

Prerequisite(s): BIOL 115 and instructor consent.

Grading: Letter Graded

BIOL 220 - Science Communication

3 unit(s)

This course will focus on learning to effectively present ongoing scientific research to a wide audience, with an emphasis on developing science communication skills, learning to place data within the context of a field, and developing critical thinking skills.

Pre/Corequisite(s): BIOL 202

Grading: Letter Graded

BIOL 221T - Advanced Bioinformatics for Biotechnology

4 unit(s)

Bioinformatics/computer applications to solve advanced problems in molecular and cell biology by manipulation and analysis of DNA, RNA, and protein sequences.

Prerequisite(s): BIOL 116 or either CHEM 130A, CHEM 135, or Chem 136 and admission into the Master of Biotechnology program.

Grading: Letter Graded

BIOL 227 - Advanced Physiology

3 unit(s)

Integrated discussion of modern physiological techniques to address a broad array of questions in physiology. Each semester will emphasize a particular field of physiology.

Prerequisite(s): Graduate standing and completion of an upper division physiology course or instructor consent.

Grading: Letter Graded

BIOL 227T - Principles of Pharmacology

3 unit(s)

Principles of pharmacology, especially as related to the pharmaceutical industry and clinical applications.

Prerequisite(s): BIOL 30 or equivalent; Physiology recommended

Grading: Letter Graded

BIOL 230 - Comparative Animal Physiology

3 unit(s)

A seminar in the functional relationships of invertebrates and vertebrates. Evolutionary patterns and environmental adaptations are considered.

Prerequisite(s): An upper division course in physiology or instructor consent.

Grading: Letter Graded

BIOL 233 - Immunological Techniques

3 unit(s)

Principles, concepts and mechanisms relative to serological and other immunological procedures and reactions with emphasis on practical applications.

Misc/Lab: Lab 9 hours.

Prerequisite(s): Upper division microbiology or cell biology, or organic chemistry and instructor consent.

Grading: Letter Graded

BIOL 233T - Immunological Techniques for Biotechnology

3 unit(s)

Principles, concepts, and mechanisms relative to serological and other immunological procedures and reactions with emphasis on applications in the biotechnology industry.

Prerequisite(s): Immunology laboratory (grade "B" or better) or equivalent experience and admission to the Master of Biotechnology program.

Grading: Letter Graded

BIOL 242 - Advanced Paleontology

4 unit(s)

The lecture portion of this course will be conducted as a seminar; students will read and discuss classic and important newer papers on macroevolutionary theory and paleobiology. In the lab portion of this course, students will use fossil samples to develop and test scientific hypotheses that will be part of a semester-long project.

Misc/Lab: Lecture 4 hours/Lab 3 hours.

Prerequisite(s): Suitable background in geology or evolutionary biology.

Grading: Letter Graded

Cross-listed with GEOL 242. Geology is responsible for scheduling.

BIOL 255E - Advanced Topics: Ecology and Evolution

1-4 unit(s)

Advanced Topics: Ecology and Evolution is a rotating topics course; each offering will have different content. The purpose of the seminar is to help students develop a deeper understanding of specific aspects of ecology and evolution through thorough examination of primary scientific literature, discussion and presentations. Enrollment in at least 3 units of BIOL 255E is mandatory for the MS Biological Sciences: concentration in Ecology and Evolution program.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Graduate standing or Instructor consent

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

BIOL 255L - Advanced Biology Laboratory

1-4 unit(s)

Laboratory or field experience in advanced biology. Course is repeatable for credit when content changes.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): May be taken concurrent with any 255 seminar.

BIOL 255M - Advanced Topics: Molecular & Microbiology

1-4 unit(s)

Advanced study in molecular and microbiology. Course is repeatable for credit when content changes.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

BIOL 255P - Seminar in Advanced Biology: Physiology

1-4 unit(s)

Advanced study in plant or animal physiology. Course is repeatable for credit when content changes.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): graduate standing or instructor consent

Grading: Letter Graded

BIOL 255T - Introduction to Stem Cell Techniques

4 unit(s)

This laboratory/lecture course exposes students to the theoretical and practical aspects of contemporary stem cell techniques. Students will culture mouse embryonic stem cells on feeders and characterize them using immunofluorescence and flow cytometry, differentiate various lineages and observe genetic modifications. Students will prepare inducible pluripotent stem cells (iPS) from primary cells. This includes both the theoretical and practical aspects of applied stem cell in regenerative approaches as well as models of disease for research purposes. Students are expected to keep a laboratory notebook and document their experiments and results. Additionally, students will present scientific papers on recent topics in stem cell basic research, as published in scientific journals of recent year. The goal of this course will be to provide students with basic experience in methods used in stem cell laboratories, so that they can transition to an internship in a stem cell laboratory (although many of these techniques are applicable in a number of diverse fields), and to provide students with the most current stem cell topics while practicing effective presentation and evaluation skills.

Grading: Letter Graded

BIOL 256 - Advanced Experimental Design and Analysis

3 unit(s)

Provides training in advanced statistical procedures and experimental designs for graduate-level research. The content is tailored to research needs of enrolled students. Includes sampling schemes, randomization analyses, complex ANOVA and multivariate analyses.

Prerequisite(s): Upper division statistics course; graduate standing.

Grading: Letter Graded

BIOL 280 - Master's Individual Studies

1-3 unit(s)

Graduate level research projects designed in conjunction with faculty advisor.

Course is repeatable for up to 6 units.

Prerequisite(s): Graduate standing and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit.

BIOL 280T - Internship in the Biotechnology Industry

2 unit(s)

A 8-10 week internship at a Bay Area biotechnology company in R&D, quality control, manufacturing, human resources, marketing, or sales.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Admission to the Master of Biotechnology program.

Grading: Credit/No Credit.

BIOL 281T - Individual Studies in Biotechnology

1-4 unit(s)

Supervised, advanced work in specialized fields relevant to biotechnology.

Prerequisite(s): Admission to the Master of Biotechnology program; instructor consent and Program Director.

Grading: Letter Graded

BIOL 282C - Biotechnology Company Management

3 unit(s)

Provides general management perspectives of biotechnological innovation; focuses on challenges of managing the development of new technologies, products, and processes in biotech sectors; examines management concepts, industry practices, and cases relevant to the biotechnology sector.

Grading: Letter Graded

BIOL 283T - Topics in Biotech Regulatory Affairs

3 unit(s)

Introduction to laws regulating the pharmaceutical, biotechnology, medical device industries. Discussions of company organization; product development and commercialization; Good Manufacturing Practice.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): Admission to the Master of Biotechnology program and consent of the Program Director.

Grading: Letter Graded

BIOL 284 - Master's Directed Reading

1-3 unit(s)

Directed reading and discussion of biological literature and/or individualized preparation for culminating graduate experience. Not available to Open University Students.

Prerequisite(s): Graduate Standing in MA program; instructor consent
Pre/Corequisite(s): Graduate standing in MA program and instructor consent.
Grading: Mandatory Credit/No Credit/RP

BIOL 285 - Colloquium in Biological Sciences

1 unit(s)

Meetings for the presentation and discussion of advanced studies in special fields including original work by the faculty, guest investigators and graduate students. Topics will vary from year to year.

Grading: Credit/No Credit

BIOL 285T - Colloquium in Biotechnology

1 unit(s)

Meetings for reporting, by written and oral presentations, progress through the MBT program.

Prerequisite(s): Admission to the Master of Biotechnology program.
Grading: Credit/No Credit

BIOL 291A - Introduction to Molecular Diagnostics I

3 unit(s)

Graduate level course which will include topics relevant to all tests and methods used to identify a disease or the predisposition for a disease through DNA, RNA, or protein analysis. Methods for isolation from human clinical samples.

Prerequisite(s): Instructor consent.
Grading: Letter Graded

BIOL 291B - Introduction to Molecular Diagnostics II: Human Genetic Diseases and Detection

3 unit(s)

Graduate level course which will include topics relevant to all tests and methods used to identify a disease or the predisposition for a disease through DNA or RNA analysis of human samples.

Prerequisite(s): BIOL 291A or Instructor Consent.
Grading: Letter Graded

BIOL 297 - Graduate Research

1-4 unit(s)

Advanced graduate lab or field research projects designed in conjunction with faculty advisor. Repeatable for credit, up to 10 units can be applied towards the degree.

Course is repeatable for up to 10 units.

Prerequisite(s): Graduate Standing and Instructor Consent.
Grading: Mandatory Credit/No Credit/RP

BIOL 298 - MS Project Culminating Experience

1 unit(s)

Culminating experience for MS Project Option, consisting of the development of a manuscript describing student's research and following journal guidelines for manuscript preparation, followed by a public seminar defending the research project.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): Advancement to candidacy for the Master of Science degree

Grading: Mandatory Credit/No Credit/RP

BIOL 298M - MA Culminating Experience

1 unit(s)

Advanced individual work toward program Plan B (Comprehensive Exam or Master's Project).

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Advancement to candidacy for the MA in Biological Sciences and graduate advisor approval.

Grading: Credit/No Credit/RP.

BIOL 299 - Master's Thesis

1-4 unit(s)

Culminating experience for MS Thesis Option, consisting of the development of a thesis describing the student's research, followed by a public seminar defending the research project.

Prerequisite(s): Advancement to candidacy for the Master of Science degree. Must be a declared Biology Major. Not available to Open University Students.

Grading: Credit/No Credit/RP.

BIOL 1290R - Culminating Experience Supervision

1 unit(s)

This course covers the same topics and has the same objectives as BIOL 298/BIOL 298M/BIOL 299.

Course is repeatable for up to 16 units.

Prerequisite(s): Must have received an RP in BIOL 298/BIOL 298M/BIOL 299. Must be a declared Biology Major (all).

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Biomedical Engineering

BME 25 - Introduction to Biomedical Engineering Design

2 unit(s)

Introduction to the broader field of biomedical engineering, with emphasis on design of biomedical devices. Development of familiarity with standards and software tools relevant to the biomedical engineering industry, packages for design and analysis, FDA and EU guidelines.

Prerequisite(s): CHEM 1A, ENGR 10, with a grade of "C-" or better.

Corequisite(s): MATH 31 or MATH 31X, and PHYS 50.

Grading: Letter Graded

BME 65 - Biomedical Applications of Statics

3 unit(s)

Detailed study of bodies in equilibrium as they apply to biomedical systems. Two-dimensional analysis of human joints and load-bearing implants are explored. Topics include free body diagrams, anthropometric measurements, internal forces, loading types, and stress shielding.

2 hours lecture/3 hours lab.

Prerequisite(s): MATH 31 or MATH 31X, and PHYS 50.

Grading: Letter Graded

BME 68 - Biomedical Applications of Metals and Ceramics

3 unit(s)

Fundamentals of the structure, processing, and properties of metals and ceramics used in medical technology. Emphasis is placed on using metals and ceramics for implantable and non-implantable biomedical devices. Recent trends in biomaterials are explored.

Prerequisite(s): CHEM 1A, MATH 31 or MATH 31X, PHYS 50.

Grading: Letter Graded

BME 115 - Foundations of Biomedical Engineering

4 unit(s)

Introduction to the fundamental principles of biomedical engineering. Core conservation equations are applied to mass, energy, charge, and momentum transfer in biomedical systems. Additional topics provide a breadth of exposure in cell and molecular biology, diagnostics and analytical techniques, statistical analysis of biomedical data, bioinformatics, bioinstrumentation, FDA regulations, and biomedical ethics.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 30, CHEM 1B, ENGR 10, MATH 32 or MATH 32X, and PHYS 50.

Grading: Letter Graded

BME 116 - Biosensors and Bioinstrumentation

3 unit(s)

Biomedical applications of biosensors and instrumentation systems. Design and development of new instrumentation. Systems for measuring biological signals, biopotentials, pressure, stress, temperature, and optical properties. Biosensors based on different transducer systems and sensing elements. USFDA regulations and safety considerations.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): PHYS 51, BME 115, BME 177, or instructor consent.

Grading: Letter Graded

BME 117 - Biotransport Phenomena

3 unit(s)

Applications of fundamentals of thermodynamic and kinetic aspects of energy and mass transport phenomena to biological systems. Development of quantitative description of transport processes beginning from the molecular level to entire organ systems.

Prerequisite(s): BME 115, MATH 33A or MATH 33LA, BME 130 all with a grade of C- or better.

Grading: Letter Graded

BME 130 - Numerical Methods in Biomedical Engineering

3 unit(s)

Course applies computational and numerical analysis techniques to myriad Engineering problems. The course focus is on application of numerical analysis to BME topics ranging from image analysis to nonlinear systems. We will employ various computational tools, including MATLAB/Simulink and ImageJ.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): MATH 32 or MATH 32X, BIOL 30, and CHEM 1B all with a grade of C- or better.

Corequisite(s): BME 115, MATH 33A or MATH 33LA.

Grading: Letter Graded

BME 133 - Programming Applications in Biomedical Engineering

1 unit(s)

Introduction to applied programming applications in biomedical engineering. Use of Python, JMP. ImageJ to gather, organize, analyze, and present various data types, especially those pertinent to biomedical engineers working in FDA-regulated environments.

Lab 3 hours.

Prerequisite(s): BME 25.

Grading: Letter Graded

BME 135 - Biomedical Engineering Design Methods

2 unit(s)

Review of FDA-required design methods. Application of engineering drafting and design principles to the development of biomedical devices and manufacturing processes. Use of computer-aided design (CAD) tools to generate 3-D models and 2-D drawings of parts and assemblies. Application tolerances for statistical process control.

Lecture 1 hour/lab 3 hours.

Prerequisite(s): BME 25 and ENGR 10.

Grading: Letter Graded

BME 147 - Quantitative and Statistical Methods for Biomedical Engineers

3 unit(s)

Descriptive statistics; hypothesis testing; linear and nonlinear model regression; statistical approach to medical device verification and validation; statistical sampling plans; analysis of survival data; bioinformatics; quantitative methods for design and testing of biomedical devices; programming for statistical analysis (R, Matlab).

Prerequisite(s): MATH 32 or MATH 32X or MATH 32H with a grade of "C-" or better.

Grading: Letter Graded

BME 165 - Applied Engineering Biomechanics

3 unit(s)

Exploration of structural biomechanics applied to the human body. Students compare linear and nonlinear elastic, and viscoelastic models for describing the behavior of musculoskeletal tissues and implants. Concepts include bone remodeling, osteoarthritis, implant failure, muscle contraction, and cardiac mechanics.

Prerequisite(s): CE 95, CE 99, BME 65 or equivalent; And MATE 25 or BME 68 or equivalent.

Grading: Letter Graded

BME 168 - Medical and Biological Polymers

3 unit(s)

Polymers applications in medical devices and equipment, biological and biodegradable polymers, structure-processing-properties relationships, chemistry, thermal transitions, mechanical, electrical and optical properties, clinical outcomes and complications arising from use of polymers, regulatory framework for polymer use in humans.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BME 68 or MATE 25 with "C-" or better

Grading: Letter Graded

BME 174 - Biomedical Regulatory Requirements

3 unit(s)

Study of Food and Drug Administration regulations for design of biomedical engineering products and processes, including design review and documentation processes; Good Laboratory Practices; Good Manufacturing Practices; quality and reliability requirements.

Prerequisite(s): ENGR 100W, BME 115

Corequisite(s): BME 177

Grading: Letter Graded

BME 177 - Physiology for Engineers

3 unit(s)

Structure and function of physiological systems and discussion of topics of particular importance to the design, development, construction and clinical application of biomedical devices. Practical laboratory application of technologies to monitor, repair, replace or augment physiological systems.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 30, CHEM 1B, PHYS 50

Grading: Letter Graded

Cross-listed with BIOL 177. Biomedical Engineering is responsible for scheduling.

BME 178 - Biomedical Product Realization

3 unit(s)

Basics of product realization from concept to clinical trials to prepare students for career(s) in multiple bioengineering sectors. Specific topics include: Product Concept, Research & Development, Design Controls in Application, Design Verification and Design Validation, Process Control in Application, Software Validation, Effective Risk Management, Engineering and Quality Management System Practices.

Prerequisite(s): ENGR 100W, BME 147, BME 174 all with a grade of C- or better.

Grading: Letter Graded

BME 180 - Individual Studies

1-3 unit(s)

Individual work on special topics. Students work with faculty and/or industry mentors on design, research, lab development or other types of projects.

Prerequisite(s): Upper division standing

Grading: Credit/No Credit

BME 182 - Orthotics and Prosthetics

3 unit(s)

Diagrammatic breakdown of prosthetic design covering patient interfaces, socket designs, materials, modular components, prosthetic feet, prosthetic knees, upper extremity designs. Treatment options within current standard of care, device design trends, future device, material, and design needs.

Prerequisite(s): CE 95 or CE 99, MATE 25, BME 115, BME 177

Grading: Letter Graded

BME 185 - Digital Health

3 unit(s)

Benefits and challenges related to digital health, the technology trends, and the modernization of medical devices. Specific topics include software as a medical device, related cybersecurity elements and FDA/NIST guidance, device software functions, mobile medical applications, health information technology, medical device data systems, medical device interoperability, telemedicine, and wireless medical devices.

Prerequisite(s): BME 115, BME 133

Grading: Letter Graded

BME 187 - Medical Device Quality Systems

3 unit(s)

Introduction to the quality management system (QMS) framework for medical devices, principles of QMS, product and service quality evaluation, and control. Topics include: document control, supplier management, training, audits, reliability assessment, feedback and monitoring, quality tools for investigation, and continuous improvement techniques.

Prerequisite(s): BME 174.

Pre/Corequisite(s): BME 147 or instructor consent.

Grading: Letter Graded

BME 188 - Biomedical Device Manufacturing

3 unit(s)

Overview of manufacturing processes for producing biomedical devices, implants, instruments, prosthetics, and capital equipment. Introduction to design processes and tools that facilitate start-up and expansion of manufacturing activities.

Prerequisite(s): BME 25, MATE 25, BME 115, BME 177, all with C- or better

Grading: Letter Graded

BME 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

BME 198A - Senior Design Project I

2 unit(s)

Descriptive statistics; hypothesis testing; linear and nonlinear model regression; statistical approach to medical device verification and validation; statistical sampling plans; analysis of survival data; bioinformatics; quantitative methods for design and testing of biomedical devices; programming for statistical analysis (R, Matlab).

Lecture 1 hour/Lab 3 hours.

Satisfies SJSU Studies S: Self, Society & Equality in U.S. when taken with BME Major sequence.

Prerequisite(s): MATH 32 or MATH 32H or MATH 32X , BME 115, and BME 177 all with a grade of "C-" or

better. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Allowed Declared Major: Biomedical Engineering or Graduate Standing.

Corequisite(s): BME 147.

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: BME 198B, ENGR 195A and ENGR 195B.

BME 198B - Senior Design Project II

2 unit(s)

Continuation of BME 198A. Culmination of project requiring formal oral presentation and report consisting of documentation of project methodology and results.

Lecture 1 hour/Lab 3 hours.

Satisfies SJSU Studies V: Cultures and Global Understanding (when taken with BME major sequence).

Prerequisite(s): BME 198A with C or better; BME 147 with C- or better. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Allowed Declared Major: Biomedical Engineering or Graduate Standing.

Pre/Corequisite(s): ENGR 195B.

Grading: Letter Graded.

Note(s): Meets GE Areas S and V when course is taken in combination with: BME 198A, ENGR 195A and ENGR 195B.

BME 207 - Experimental Methods in BME

3 unit(s)

Introduction to experimental methods and techniques used in Biomedical Engineering. Principles of data representation, analysis, and experimental designs in bioreactors, biomaterials, and medical devices. Topics include error analyses, modeling, normality testing, hypothesis testing. This is a hands-on course, and students will operate equipment in the departments laboratories.

2 hours lecture/3 hours lab.

Prerequisite(s): BME 115 and graduate standing.

Grading: Letter Graded

BME 210 - Mathematical Methods in Biomedical Engineering

3 unit(s)

Mathematical and computational methods applied to biomedical engineering. Topics include: i) statistical analysis of biomedical datasets, ii) design of experiments to meet FDA requirements, iii) solution techniques for partial differential equations, and iv) modeling of stochasticity in biological systems including error analysis. Prerequisite(s): CMPE 30, MATH 33LA or MATH 33A. Or Graduate standing or by instructor consent.

Grading: Letter Graded

BME 217 - Experimental and Computational Biofluid Mechanics

3 unit(s)

Introduction to blood rheology, cardiovascular fluid mechanics, blood flow dynamics in blood vessels and in proximity of implanted cardiovascular devices, airflow in the lungs, and other physiological flow phenomena. Healthy and diseased states will be considered. Students will familiarize with both experimental and computational approaches to measure physiological flows.

Prerequisite(s): BME 117 and BME 210 and Graduate standing; or instructor consent.

Grading: Letter Graded

BME 254 - Microscale Biomedical Systems: Physics and Applications

3 unit(s)

Introduction to microscale physics and phenomena used in biomedical systems; analytical techniques and diagnostic applications. Course will discuss: microscale fluid mechanics (Navier-Stokes), electrical phenomena (Maxwell), and particle/molecule/device interactions. Case studies focus on applications of microscale physics to biomedical engineering analyses.

Prerequisite(s): BME 117, MATH 33A or MATH 33LA, and graduate standing; or instructor consent.

Grading: Letter Graded

BME 256 - Biomedical Applications of Nanoplatfoms

3 unit(s)

Biomedical applications of nanoplatfoms explores the development of three cutting edge sub fields: nanoplatfoms in therapeutics; nanoplatfoms in prosthesis and implants; and nanoplatfoms in diagnosis and screening. The socioeconomic risks and solutions of nanoplatfoms in biomedical applications are also explored.

Prerequisite(s): BME 177, Graduate Standing or instructor consent

Grading: Letter Graded

BME 258 - Medical Imaging for Engineers

3 unit(s)

Introduction to the principles and clinical applications of medical imaging. Interaction of radiation with matter. Image acquisition and manipulation. Clinical imaging techniques: X-ray radiography and computed tomography, ultrasound imaging, magnetic resonance imaging. Safety considerations. Computer laboratory: image enhancement, segmentation, contouring.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): PHYS 51, MATH 33A or MATH 33LA, BME 177, and BME 210. Or Instructor consent.

Grading: Letter Graded

BME 272 - Biomedical Device Design and Principles

3 unit(s)

Principles involved in designing medical devices to function reliably in human body; interaction between synthetic and biological materials; use of design principles during conception and development of medical

devices; effect of design on manufacture clinical performance, reliability and quality/regulatory assurance.

Prerequisite(s): BME 115, Graduate standing or instructor consent.

Grading: Letter Graded

BME 274 - Regulatory, Clinical and Manufacturing Aspects of Medical Devices

3 unit(s)

FDA regulations related to medical devices; planning and implementation of clinical trials; sterilization techniques; failure mode analysis; quality control for medical device manufacture; intellectual property; field trips to device manufacturers.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): BME 115, Graduate standing; or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

BME 276 - Project Management in Biomedical Technologies

3 unit(s)

Context for the emergence of project management as a credible business discipline increasingly integrated into the functional and decision-making fabric of companies in the biomedical technology sector; exploration of the typical skillset of the modern project management professional and the teams they lead in companies developing medical devices and pharmaceutical therapies; fundamentals of applied traditional project management tools and techniques to medical device, pharmaceutical and combination product research, development and commercial launch; overview of typical development cycles including regulatory pathways, timeline management and risk mitigation approaches; exposure to contemporary technical project management challenges emerging from value perception, organizational politics, people and power dynamics including the imbalance of technical and commercial conflicts.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

BME 280 - Graduate Research Studies

1-3 unit(s)

Supervised individual research or directed studies for graduate students. Students work with faculty mentors on research-oriented projects, including comprehensive critical literature reviews, development of new testing or analysis methodologies, experimental or numerical investigations.

The course is repeatable for credit up to two times for a maximum of 3 units.

Prerequisite(s): Graduate classified standing or instructor consent.

Grading: Mandatory Credit/No Credit/RP

BME 288 - Tissue Engineering

3 unit(s)

This course strikes a balance among the diversity of subjects that are related to tissue engineering, including biology, chemistry, material science, and engineering, among others. Emphasis on research areas of clinical value for engineering new organ systems.

Prerequisite(s): Graduate Standing or Instructor Consent

Grading: Letter Graded

BME 291 - MS Thesis/Project Preparation Seminar

3 unit(s)

Assists graduate students in the development and completion of their Master's thesis/project research proposal and exposes them to research projects being done by others in the BME program.

Prerequisite(s): BME 207, Good standing (minimum GPA 3.0), classified status in the BME MS program, and Petition for Advancement to Graduate Candidacy form submitted.

Grading: Letter Graded

BME 298 - MS Project

3 unit(s)

Master's project work in Biomedical Engineering.

Prerequisite(s): Advancement to candidacy and BME 291.

Grading: Credit/No Credit/RP.

BME 298I - Masters Project Internship

1-2 unit(s)

Masters project work in Biomedical Engineering. This section is for students completing their Masters project work at an off-campus location.

Prerequisite(s): Advancement to candidacy and BME 291.

Grading: Mandatory Credit/No Credit/RP

BME 299 - MS Thesis

3 unit(s)

Masters thesis work in Biomedical Engineering.

Prerequisite(s): Advancement to candidacy, BME 291, BME 298.

Grading: Mandatory Credit/No Credit/RP

BME 299I - Master's Thesis Internship

1-3 unit(s)

Master's thesis work in Biomedical Engineering. This section is for students completing their Master's thesis work at an off-campus location.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Advancement to candidacy; BME 291; BME 298 or BME 298I; or instructor consent.
Grading: Mandatory Credit/No Credit/RP

BME 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on dissertation, thesis, or project or in preparation for comprehensive exams beyond the minimum required units for cases in which final deliverables are still in progress and all other degree requirements except the culminating experience have been fulfilled.

Prerequisite(s): Outstanding RP grade in a previous semester in BME 298 or BME 299
Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Botany

BOT 104 - Plant Taxonomy

4 unit(s)

Taxonomic relations and classification of ferns, conifers and flowering plants, with practice in their collection and identification. Selected techniques of cytotoxicology, chemotaxonomy, palynology and numerical taxonomy.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of C or better). Must be a declared major in Biological Sciences; other majors with instructor consent.
Grading: Letter Graded

BOT 113 - Principles of Systematics

3 unit(s)

Students gain the understanding and skills needed to taxonomically study biodiversity, including the use of morphological and DNA sequence characters to examine phylogeny, and use of a range of biodiversity research techniques and tools.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).
Grading: Letter Graded

Cross-listed with BIOL 113 / ENT 113 / ZOOL 113. Biological Sciences is responsible for scheduling.

BOT 114 - Functional Morphology

3 unit(s)

Develops understanding and skills needed to taxonomically study biodiversity, including the use of morphological and DNA sequence characters to examine phylogeny, and use of a range of biodiversity research techniques and tools.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 115 or BIOL 115 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 114 / ENT 114 / ZOOL 114. Biological Sciences is responsible for scheduling.

BOT 143 - Biogeography

3 unit(s)

Examination of the patterns of biodiversity over space and through time. Using data and models from a variety of sources including botany, zoology, ecology, evolutionary biology, paleontology, and geology, effects of isolation, elevation, and latitude are examined to understand spatial patterns of biodiversity.

Prerequisite(s): BIOL 31 or equivalent (with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 143 / ENT 143 / ZOOL 143. Biological Sciences is responsible for scheduling.

Sustainability Related

BOT 160 - Ecology

4 unit(s)

Factors that influence the distribution and abundance of organisms; some aspects of applied ecology.

Lecture 3 hours/Lab 3 hours.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability for Biology Majors only.

Prerequisite(s): BIOL 113 (with a grade of "C or better"); Allowed Declared Majors (Biology, Natural Science); Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Pre/Corequisite(s): BIOL 55 or BIOL 155 or BIOL 156 or equivalent Biostatistics course, or instructor consent.

Grading: Letter Graded.

Cross-listed with BIOL 160. Biological Sciences is responsible for scheduling.

BOT 165 - Plant Communities of California

4 unit(s)

Ecology, species composition and vegetation structure of California plant communities. Origins, history and changes brought about by natural succession and human impact.

Lecture 2 hours/Lab-Field 6 hours (some weekend field trips).

Prerequisite(s): BIOL 115 or BIOL 118 with a grade of C or better. Must be a declared major in Biological Sciences; other majors with instructor consent.

Grading: Letter Graded.

Sustainability Related - SDG 15: Life on Land

BOT 180 - Individual Studies

1-4 unit(s)

Advanced work in special fields.

Repeatable for credit.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Credit/No Credit

BOT 186 - Senior Thesis

2-4 unit(s)

Advanced laboratory or field research under supervision of faculty member, culminating in a senior thesis.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Credit/No Credit

Business - Accounting and Finance

BUS1 20 - Financial Accounting

3 unit(s)

Accounting concepts and methods to analyze and record transactions, construct financial statements, and interpret financial data.

Prerequisite(s): MATH 70 or any of the following if completed with a C or better: MATH 30, 30X, 31, 31X, 32, 32X, 70X, 71, or 71X.

Grading: Letter Graded

BUS1 20N - Survey of Accounting

3 unit(s)

Accounting concepts and methods for accumulating and summarizing financial data and interpretation of financial statements. For business minors and non-business majors.

Prerequisite(s): Sophomore status recommended, non-business majors only.

Grading: Letter Graded

BUS1 21 - Managerial Accounting

3 unit(s)

Accounting systems and concepts including managerial decisions, relevant costs, cost data, cost-volume-profit analysis, and budgeting.

Prerequisite(s): BUS1 20 or BUS1 20N.

Grading: Letter Graded

BUS1 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

BUS1 120A - Accounting Information Systems

3 unit(s)

Accounting information systems for decision-making and organizational control. Topics include: business processes, documentation, risk, internal controls, and processing of accounting information using computerized and non-computerized procedures.

Prerequisite(s): BUS 20 with a "C" or better. Declared Major in Accounting, Accounting Information Systems or Corporate Accounting and Finance. Upper division standing.

Grading: Letter Graded

BUS1 120B - Advanced AIS and IS Risk Assessment

3 unit(s)

Hands-on project-oriented computer lab to develop working knowledge and skills in using Microsoft Excel and Access as application development tools. Students design a prototype accounting system and generalized audit module prototype assessing integrity of previously designed databases.

Prerequisite(s): BUS 120A and COMM 100W or ENGL 100WB or LLD 100WB with a minimum grade of "C" or better in both. Upper division standing.

Grading: Letter Graded

BUS1 120C - Network Environment and Accounting Controls

3 unit(s)

Introduction to current network arrangements in small, medium and large corporations, including hardware/software components used to control the integrity, and access of networks. Internet interfaces including TCP/IP basics and network configurations. A practical NT domain and its administration will be included.

Prerequisite(s): BUS1 120A with a minimum grade of 'C'. Upper division standing.

Grading: Letter Graded

BUS1 120D - Accounting Topics in IT Audit

3 unit(s)

Students will be exposed to real life audit environment cases. Students will apply the EDP auditing techniques of integrated audit risk management, auditing of platforms, applications, and network as appropriate. Discussion of network security, including telecommunications, firewall, encryption and other current IT Audit issues will be included as part of IT discussion.

Prerequisite(s): BUS1 120B and BUS1 120C with a grade of 'C' in each. Upper division standing.
Grading: Letter Graded

BUS1 120G - Programming and Systems Development in AIS

3 unit(s)

This course covers the process, technical elements and current techniques used in accounting systems development. Programming topics include business reporting languages. Systems development topics include requirements analysis, functional specification, system design, implementation, testing, and maintenance.

Prerequisite(s): BUS1 20 with a minimum grade of "C".
Grading: Letter Graded

BUS1 121A - Intermediate Accounting I

3 unit(s)

Principles, control, and theory of accounting for assets; revenue recognition; preparation and analysis of income statement; correction of prior year's earnings. Projects involving data analysis required.

Prerequisite(s): BUS 20 with a minimum grade of 'C' and Upper division standing. Student must be a declared Accounting, Accounting Information Systems, Finance, or Corporate Financial Management major to enroll.

Grading: Letter Graded

BUS1 121B - Intermediate Accounting II

3 unit(s)

Principles, control, and theory of accounting for liabilities and equities; preparation, utilization, and analysis of cash flow; financial statement analysis using ratios. Projects involving data analysis required.

Prerequisite(s): BUS1 121A (with minimum grade of "C"). Upper division standing.
Grading: Letter Graded

BUS1 122A - Management Accounting and Control Systems

3 unit(s)

Examination of the concepts and procedures of cost management as applied to product and service costing, cost-volume-profit relationships, cost and profit planning, budgeting, cost structure for control and motivation, and decision-making.

Prerequisite(s): BUS1 20 with a minimum grade of "C" and upper division standing. Declared Major in Accounting, Accounting Information Systems, or Corporate Accounting and Finance.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

BUS1 123A - Taxation of Businesses and Investments

3 unit(s)

Federal taxation of businesses and investments, including property transactions, deferral techniques,

accounting periods, accounting methods, ethics, and research techniques with emphasis on corporations.

Prerequisite(s): BUS1 20 with a minimum grade of "C", Upper division standing and declared major in Accounting, Accounting Information Systems, or Corporate Accounting Finance.

Grading: Letter Graded

BUS1 123C - Taxation of Individuals

3 unit(s)

Federal taxation of individuals and the factors involved, including taxable income, exclusions, deductions, filing status, dependents, investments, credits, and pass-through entities.

Prerequisite(s): BUS1 123A with a grade of "C" or better. Upper division standing. Business Minor or Accounting or Corporate Accounting Finance major.

Grading: Letter Graded

BUS1 124 - Forensic Accounting

3 unit(s)

This course will examine the various frauds that are perpetrated on companies and discuss ways the accountant can uncover the frauds. The criminal justice system will be reviewed and the various litigation-support functions provided to attorneys by accountants will be discussed.

Prerequisite(s): BUS1 20; COMM 100W or ENGL 100W or LLD 100W; BUS1 121A and BUS1 121B with a minimum grade of "C" in each. Accounting and Corporate Accounting Finance Majors only.

Grading: Letter Graded

BUS1 125 - Special Topics in Accounting

3 unit(s)

Analysis of specialized and emerging accounting topics with emphasis on research, application, and analytical skills.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB; BUS1 121A and BUS1 121B (with minimum grade of "C" in each). Accounting and Corporate Accounting Finance Majors or Business Minor only.

Grading: Letter Graded

BUS1 125A - Advanced Writing for Accounting

3 unit(s)

Students learn to communicate accounting and other specialized financial information to a variety of audiences including employers, clients and the investing public in a manner that promotes clarity, accuracy and professionalism.

Prerequisite(s): BUS1 121A

Grading: Letter Graded

BUS1 126 - Advanced Accounting

3 unit(s)

Accounting principles for complex business entities including: consolidated reporting issues, transfer pricing issues, translating foreign currency transactions and operations, hedging foreign currency exposures, goodwill, and business combinations. Extensive use of data analytics tools.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB; BUS1 121A and BUS1 121B (with minimum grade of "C" in each). Accounting or Corporate Accounting Finance Majors or Business Minor only.

Grading: Letter Graded

BUS1 127A - Honors Practicum in Corporate Financial Management

3 unit(s)

Corporate sponsored projects in accounting and finance. Students are assigned to a host company and are required to work with the host company and faculty advisor on a topic in financial management. A report will be presented. Students are admitted based on an average 3.0 GPA in four prerequisite courses.

Course is repeatable for up to 6 units.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB; BUS1 121A, BUS1 121B, BUS1 122A and BUS1 170 with a minimum grade of "C" in each and instructor approval. Upper division standing.

Grading: Letter Graded

BUS1 127B - Advanced Honors Practicum

3 unit(s)

Course involves advanced corporate sponsored projects in accounting and finance. Students are assigned to supervisory personnel at the host company under the advisement of the instructor. Course is repeatable for credit for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Declared major in Accounting, Finance, AIS or Corporate Financial Management and instructor consent.

Grading: Letter Graded

BUS1 128 - Accounting for Nonprofit Organizations

3 unit(s)

Principles, objectives and methods of accounting for governmental and other nonprofit organizations.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB and BUS 121A (with minimum grade of "C" in both). Accounting or Corporate Accounting Finance Majors or Business Minor only.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

BUS1 129A - Financial Auditing

3 unit(s)

Examines public accounting profession, application of relevant professional standards, auditing procedures, and professional ethics. Emphasis on understanding and applying generally accepted auditing standards.

Focus on the process of forming an opinion on the "fairness of presentation" of financial statements.

Prerequisite(s): BUS1 120A, BUS1 121A with grade of C or better.

Grading: Letter Graded

Sustainability Related - SDG 8: Decent Work and Economic Growth

BUS1 129B - Operational Auditing

3 unit(s)

Study of professional and technical aspects of internal and operational auditing with emphasis on concepts, ethical conduct and significance in preparation/implementation of the audit and its findings. Effectiveness and efficiency of audits in industry and not-for-profits will be covered.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB; BUS1 120A; BUS1 121A; BUS1 121B and BUS1 122A (with minimum grade of "C" in each).

Grading: Letter Graded

BUS1 170 - Fundamentals of Finance

3 unit(s)

The finance function and its relationship to other decision-making areas in the firm. The study of time value of money along with theory and techniques in acquisition and allocation of financial resources from an internal management perspective.

Prerequisite(s): BUS1 21 or BUS1 122A; ECON 1A, ECON 1B and BUS2 90.

Grading: Letter Graded

BUS1 171A - Financial Institutions and Markets

3 unit(s)

Study of financial markets and institutions that operate in them. Examinations of money and capital markets, interest rates and financial institutions, both depository and non-depository. Emphasis on past, current and future industry and regulatory authorities.

Prerequisite(s): BUS 170 (with minimum grade of "C"). Upper division standing. Business Administration Finance or Corporate Accounting and Finance majors only.

Grading: Letter Graded

BUS1 171B - Commercial Banking

3 unit(s)

Analytical tools for the evaluation of the performance and risk of commercial banks. The measurement and management of interest rate, liquidity, credit and solvency risks. Historical and current banking regulations. Commercial credit analysis and loan policies.

Prerequisite(s): BUS1 171A with a minimum grade of "C".

Grading: Letter Graded

BUS1 172A - Investment Analysis

3 unit(s)

Procedures and tools necessary to evaluate investment variables, determine value and analyze risk/return characteristics of equity, fixed income securities, and alternative individual investments. Emphasizes responsible decisions and provides background for portfolio analysis.

Prerequisite(s): BUS 170 (with minimum grade of "C"). Upper division standing. Business Administration Finance or Corporate Accounting and Finance Majors only.

Grading: Letter Graded

BUS1 172B - Portfolio Management

3 unit(s)

Basic procedures and analytical tools necessary to construct, analyze, evaluate and revise investment portfolios or groups of assets, including computerized portfolio models. Approach and content consistent with objectives of Chartered Financial Analyst (CFA) program.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB and BUS 172A with a minimum grade of "C" in both. Upper division standing.

Grading: Letter Graded

BUS1 172C - Futures and Options

3 unit(s)

The use of derivatives for risk management by individuals, banks and corporations. The functioning of the futures and options markets for equities, fixed income and commodities. Option valuation models; Black-Scholes and beyond. Applications in personal investment strategies.

Prerequisite(s): BUS1 172A with a minimum grade of "C".

Grading: Letter Graded

BUS1 172D - Student Managed Investment Fund

3 unit(s)

Manage donated funds using Wall Street techniques. Design and evaluate fund investment strategy. Analyze firms for portfolio inclusion. Communicate buy-hold-sell recommendation.

Prerequisite(s): BUS1 170

Grading: Letter Graded

BUS1 173A - Financial Management: Theory and Policy

3 unit(s)

From the financial manager's perspective, considerations and alternatives for maximizing a firm's value. Tools for understanding what determines value and what managerial actions can alter value, by combining theory with practical knowledge of marketplace limitations.

Prerequisite(s): BUS 170 (with minimum grade of "C"). Upper division standing. Business Administration Finance or Corporate Accounting and Finance Majors only.

Grading: Letter Graded

BUS1 173B - Problems in Financial Management

3 unit(s)

Advance study of business case materials, including assessment of financial condition; projection of capital requirements; and analysis of decisions pertaining to working capital, capital expenditures, financing, capital structure, dividends, mergers and reorganization.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB and BUS1 173A with a minimum grade of "C" in both. Upper division standing.

Grading: Letter Graded

BUS1 173C - Entrepreneurial Finance

3 unit(s)

Basic principles of finance applied to new ventures and small businesses. Topics include incorporation, venture capital, business models, financial analysis, valuation, capital structure, cash flow forecasting, growth and exit strategies.

Prerequisite(s): BUS 170 with a minimum grade of 'C.' and Upper Division Standing

Grading: Letter Graded

BUS1 175 - Real Estate Finance

3 unit(s)

Real estate financing from the viewpoint of borrower and lender, financing mathematics, legal aspects of lending, appropriate financial instruments, taxes and real estate, loan cost analysis, loan valuation, development and assumability. Mortgage markets/institutions considered together with alternative financing techniques for various types of properties.

Prerequisite(s): BUS1 170 (with minimum grade of "C"). Upper division standing.

Grading: Letter Graded

BUS1 176 - Business Valuation

3 unit(s)

Explores the fundamentals of business valuation from a theoretical and an applied viewpoint. Utilizes accounting and financial data to apply valuation techniques in a variety of business settings. Focuses on publicly traded companies with discussions on differences around private company valuation, venture capital valuation, and other settings.

Prerequisite(s): BUS1 173A or BUS1 172A with a grade of C or better. Upper division standing.

Grading: Letter Graded

BUS1 177 - International Business Finance

3 unit(s)

Focuses on the determinants of exchange rates and the workings of international financial markets. Develops exchange rate parity relationships and introduces arbitrage strategies. Exposure to exchange rate risk is examined from the business perspective, and various hedging strategies are discussed.

Prerequisite(s): BUS1 170 (with minimum grade of "C"). Upper division standing.

Grading: Letter Graded

Sustainability Related

BUS1 179B - Selected Topics in Business Finance

3 unit(s)

Extensive investigation of selected topics with major emphasis on integration of finance theory and practice within a current business context.

Prerequisite(s): BUS1 173A (with minimum grade of "C"). Upper division standing.

Grading: Letter Graded

BUS1 180A - Individual Study Accounting

1-4 unit(s)

Prerequisite(s): Not available to Open University Students.

Grading: Credit/No Credit.

BUS1 180C - Individual Study Finance

1-4 unit(s)

Prerequisite(s): Not available to Open University Students.

Grading: Credit/No Credit.

BUS1 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Business - Global Innovation and Leadership

BUS5 16 - Introduction to Leadership & Innovation

3 unit(s)

This interdisciplinary course covers basic theories of leadership and innovation and investigates key topics that influence contemporary social leadership issues. Students assess their leadership styles to create personal development plans leading toward positive, innovative impacts on society. A service learning component of 10 hours for the semester is required.

Grading: Letter Graded

BUS5 92 - International Program Studies

1-14 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

BUS5 140 - Fundamentals of Operations Management

3 unit(s)

Familiarizes students with processes that transform inputs into finished goods and services; helps students understand the importance of operations management and how it interacts with other parts of the organization; develops skills in applying appropriate analytical tools to business operations challenges.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

BUS5 141 - Procurement and Supply Management

3 unit(s)

Comprehensive survey of forecasting, inventory management (including just-in-time), purchasing, supplier relations, warehousing (tiered, centralized, decentralized) and distribution methods. Make-or-buy analysis and specification/standardization techniques.

Prerequisite(s): Upper Division Standing or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

BUS5 141B - Transportation & Supply Chain Logistics

3 unit(s)

Coverage of the fundamentals of transportation management combined with a focus on its role in global supply management. The challenge of managing the various modes of transportation is combined with strategies for their use in the supply chain environment.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

BUS5 142 - Total Quality Management

3 unit(s)

Holistic approach to managing quality: interaction of production design, work design and the manufacturing process. International view and roles qualitative and quantitative techniques play in successful quality management programs.

Prerequisite(s): Upper Division Standing or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

BUS5 142B - Business Process Management

3 unit(s)

Includes concepts and methods to optimize business processes relevant for creating value for the customers and adding value to an organization. Provides capability of designing and managing business processes and the interfaces between Operations Management and other business functions.

Prerequisite(s): Upper Division Standing or instructor consent

Grading: Letter Graded

BUS5 144 - Supply Chain Management

3 unit(s)

Addresses concepts/tools for effective and efficient management of supply chains. Topics include materials planning/control, sourcing strategy, strategic alliances, information technology role, quality/customer issues, inventory management, and distribution/logistics management.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

BUS5 144B - Operations & Supply Chain Analytics

3 unit(s)

Builds analytic thinking for improving operations and supply chain management (OSCM). Introduces analytical methods, tools, and software to analyze OSCM problems and then derive managerial implications and decisions in global business operations perspectives.

Prerequisite(s): BUS5 140 or Instructor Consent and Upper Division Standing. BUS4 91A or BUS2 190 is strongly recommended.

Grading: Letter Graded

BUS5 145 - Operations & Supply Chain Strategy

3 unit(s)

Studies operations management issues unique to manufacturers with extensive international operations. Educational objectives are to develop an understanding of: the strategic tradeoffs associated with global operations, total supply chain management and the economics of transnational logistics.

Prerequisite(s): Upper Division Standing or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

BUS5 145B - Healthcare Operations Management

3 unit(s)

Operations Management (OM) approaches across a broad range of healthcare settings: clinical, management, and support processes in the medical and public healthcare systems. Apply OM tools including flowcharting, process analysis, queuing, forecasting, six-sigma, health worker scheduling.

Prerequisite(s): Upper Division Standing or instructor consent

Grading: Letter Graded

BUS5 146 - Fundamentals of Project Management

3 unit(s)

Fundamentals of managing projects, basic concepts and techniques underlying project management, and application using the appropriate software.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

BUS5 147 - Service Operations Management

3 unit(s)

Develops skills in setting formal standards for product attributes and operating procedures that comprise service experience. Categories of services; indirect and direct consumption. Psychological/social characteristics of the consumer/server encounters, enhancing ability to monitor service quality. Total quality management.

Prerequisite(s): Upper Division Standing or instructor consent. Business Minor.

Grading: Letter Graded

BUS5 148 - Sustainable Operations Management

3 unit(s)

Introduces a holistic view of the interaction between operations activities and the environment. Builds awareness of major environmental problems and issues in the operations function of business, and learns environmental assessment and management tools for operations management.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

High Impact Practice: Service Learning

Sustainability Focused - SDG 12: Responsible Consumption and Production

BUS5 162 - International and Comparative Management

3 unit(s)

Management functions and practices in an international context; comparison of management and business practices from various political and cultural perspectives; emphasis on what managers need to be aware of in order to perform in the international environment.

Prerequisite(s): Any 100w, BUS 187 or instructor consent. Upper division standing.

Grading: Letter Graded

BUS5 162A - International Business Strategy

3 unit(s)

Course focuses on the strategic challenges and the strategic management of firms that operate and compete in a global environment. Course provides an overarching experience in international business by integrating knowledge and previous international business learning.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB, BUS 187, or instructor consent.

Grading: Letter Graded

BUS5 163A - Negotiating Globally

3 unit(s)

Introduces a theoretical framework and skill-building exercises for negotiating agreements, resolving disputes, and making decisions across cultures. Builds awareness of the global negotiating environment including cultural and institutional factors. Applicable to commercial transactions, employee relations, contract disputes, and international diplomacy.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

BUS5 163B - Business and Innovation in Emerging Economies

3 unit(s)

Management functions and practices in an international context; comparison of management and business practices from various political and cultural perspectives; emphasis on what managers need to be aware of in order to perform in the international environment.

Prerequisite(s): Upper division standing and 100W, or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 8: Decent Work and Economic Growth

BUS5 164 - Doing Business Globally

1-4 unit(s)

Comprehensive study of the business and management practices of a featured country or region. Includes historical, institutional, sociopolitical and cultural context. May be offered as a faculty-led program abroad or include a virtual study or internship component.

May be repeated for credit with a different featured country or region. Course may be repeated for up to 6 units.

Prerequisite(s): Upper division standing and 100W, or instructor consent.

Grading: Letter Graded

BUS5 164A - Doing Business in Japan

3 unit(s)

Comprehensive study of the management and business practices in Japan. Includes the historical, institutional, sociopolitical, and cultural contexts that are relevant to conducting business in Japan and

working effectively with Japanese business partners.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

BUS5 164B - Doing Business in India

3 unit(s)

Comprehensive study of the business and management practices in India. Includes historical, institutional, sociopolitical, industrial and cultural context, along with economic and industrial organizational dynamics.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

BUS5 164C - Doing Business in China

3 unit(s)

Comprehensive study of the business and management practices in China. Includes historical, institutional, sociopolitical, industrial and cultural context, along with economic and industrial organizational dynamics.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Grade

BUS5 165A - Global Leadership

3 unit(s)

This course introduces students to global leadership and its development and is designed for students who want to work effectively with people in diverse settings. Taught experientially, the course involves simulations, innovation projects, and extensive individual feedback.

Prerequisite(s): Any 100W.

Grading: Letter Graded

BUS5 167 - Managing Environmental Issues

3 unit(s)

The management of environmental issues, including the relationship of business to the natural environment; the public policy context of management decision-making; and the greening of the corporation and implications for strategic management, operations, human resources, marketing and accounting.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ENVS 167. Global Innovation & Leadership is responsible for scheduling.
Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

BUS5 169A - Honors Seminar

3 unit(s)

Introduces some of the consulting and research practices used in the fields of Entrepreneurship, International Business, Operations and Supply Chain Management. Integrates conceptual and experiential

exercises, as students apply scientific, evidence-based decision making to address organizational opportunities and challenges. Training on and application of conducting interviews with stakeholders (e.g. managers, employees, customers), gathering qualitative and quantitative data from primary and secondary sources, and analyzing these data to provide actionable recommendations.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB, Upper division standing, instructor consent.
Grading: Letter Graded

BUS5 169B - Honors Practicum in Organization and Management

3 unit(s)

Second part of a two-semester honors program sequence. Student teams will work on a project sponsored by a company or other organization, under the supervision of the sponsor and the instructor. Teams will present their final report to the sponsor.

Prerequisite(s): BUS3 160 or BUS3 161A and permission of the instructor.
Grading: Letter Graded

BUS5 180D - Individual Study

1-3 unit(s)

Individual work on special topics by arrangement. Petition and plan of study must have consent of instructor and Chairperson.

Course may be repeated for credit for up to 3 units.

Grading: Credit/No Credit

BUS5 181 - Introduction to Entrepreneurship

3 unit(s)

Insight into the characteristics of entrepreneurs, the approaches they use to create, identify and evaluate opportunities for new ventures and the skills that are needed to start and manage new ventures and develop a preliminary business plan.

Prerequisite(s): Upper division standing
Grading: Letter Graded

BUS5 182 - Business Plans for New Ventures

3 unit(s)

An integrative course involving teamwork to prepare complete plans for starting a new business. This will require analyzing the industry and potential market, the competitive advantage of the business proposition, human and financial resource requirements and the founders' skills.

Prerequisite(s): BUS 181 or instructor consent. Upper division standing.
Grading: Letter Graded

BUS5 182A - Startup Founders & Funders

3 unit(s)

Exploration of the early decisions that have important long-term consequences for founders and funders. Examines the motivations, mechanics and resources available for those interested in investing in early stage ventures as an angel investor or venture capitalist.

Grading: Letter Graded

BUS5 183 - Global Entrepreneurship

3 unit(s)

Will explore the opportunities that entrepreneurs create, encounter and change in the global and cross-cultural arena. It will examine how entrepreneurs adapt to and succeed in a global economy and how institutional networks facilitate global and immigrant entrepreneurship.

Prerequisite(s): Upper Division or instructor consent

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

BUS5 184A - Management of Innovation

3 unit(s)

Discusses types of innovation and their impact. Analyzes industry practices in management of innovation for corporate growth and renewal through new products, processes, organization, and business models. Examines strategic and tactical aspects of the innovation process and alignment of innovation efforts with strategy.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

BUS5 185 - Family Business Dynamics

3 unit(s)

This course explores and analyzes the unique issues and challenges of family businesses in terms of the dynamic relationship between the family and business and its impact on decision-making and performance of the business.

Prerequisite(s): BUS5 181 or instructor consent.

Grading: Letter Graded

BUS5 186H - Entrepreneurship Laboratory

3 unit(s)

Explores all facets of growing an entrepreneurial organization, including building the team, sales, marketing, operations, and finance. Opportunity to learn with practical internship and roundtables with entrepreneurs, venture capitalists and others in the new venture ecosystem.

Prerequisite(s): Instructor's consent.

Grading: Letter Graded

BUS5 186V - Venture Lab

3 unit(s)

VLAB is an experiential course in which students work on the process of developing and testing the idea(s) for a new venture. The course combines theory with hands-on entrepreneurship. Students will test each aspect of the business model outside the class, and share the insights with their peers in class. By the end of the course, they will have completed a prototype and be able to demonstrate the business opportunity.

Prerequisite(s): Upper Division Standing or Instructor Consent

Grading: Letter Graded

BUS5 187 - Global Dimensions of Business

3 unit(s)

An integrative interdisciplinary course that provides an overview of economic, social, cultural, political and legal factors and institutional forces influencing cross-border business; introduces the global dimensions of business functions; develops the ability to identify and manage the unique opportunities and challenges presented in global business.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

BUS5 192 - International Program Studies

1-14 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

BUS5 194 - Business Organization and Management of Technology Enterprise

3 unit(s)

This course provides a "top down" overview of how commercial business works, including the business components: Corporate Environments, Human Resources, Legal, Marketing, Customer Insights, Management/Leadership. Communication and business soft skills will be covered providing a foundation for a solid business acumen. All class sessions focus on local and global perspectives.

Prerequisite(s): BUS 193 or ENGR 193.

Grading: Letter Graded

Cross-listed with ENGR 194. General Engineering is responsible for scheduling.

BUS5 196E - Startup Founders and Funders

3 unit(s)

Covers the early decisions that have important long-term consequences for founders and funders. It also examines the motivations, mechanics and resources available for those interested in investing in early stage ventures as an angel investor or venture capitalist.

Prerequisite(s): BUS5 181 or Instructor Permission

Grading: Letter Graded

Business - Graduate Level

BUS 200F - Leadership Communication for Finance Professionals

2 unit(s)

Hands-on course designed to simulate business communication scenarios encountered by finance professionals. Students will practice and apply both practical and theoretical aspects of organizational communication, including mechanics, style, and appropriateness of messages and methods based on specific organizational situations.

Grading: Letter graded.

BUS 200L - Leadership Communication

2 unit(s)

Hands-on course designed to simulate business communication scenarios encountered by professionals. Students will practice and apply both practical and theoretical aspects of organizational communication, including mechanics, style, and appropriateness of messages and methods based on specific organizational situations.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded

BUS 200W - Business Research and Communications

3 unit(s)

Using a case approach, students will learn about communication within the business world, with the intention that they will practice interpersonal, team, and presentation skills that are expected of effective managers.

Prerequisite(s): Graduate standing. Restricted to Business - MBA majors only.

Grading: Letter Graded

BUS 201 - Business Communications

1 unit(s)

This business communications course develops students' written and oral communication skills, emphasizing clear, concise and coherent articulation via a multitude of channels: e-mails, memos, cover letters, resumes, presentations, reports, etc. The course enables students to continue practicing effective communication in all aspects of their academic and professional careers.

Grading: Letter Graded

BUS 202 - Managing in the Global Economy

3 unit(s)

This course investigates the world economy, including how markets, institutions and organizations vary from country to country, and how global competition, climate change, digital and emerging economics, and shifting from manufacturing to a service economy affect management practice.

Prerequisite(s): Graduate standing. Restricted to Business - MBA majors only

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

BUS 203 - International Experience for American Executives

3 unit(s)

An intensive one-week program at one of the nine EMBA Consortium partner schools with opportunities to collaborate with classmates from around the globe. Develop your global business acumen while learning about the unique culture and business practices of the region you visit. The course consists of classroom work, company visits, and cultural experiences.

Prerequisite(s): Instructor Consent

Grading: Letter Graded

BUS 210 - Developing and Managing People

3 unit(s)

Based on the philosophy that increased self-awareness and effective self-management leads to more effective management of others, uses experientially focused, integrating models, principles, and activities.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing. Restricted to Business - MBA majors only.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

BUS 220 - Financial Accounting

3 unit(s)

Introduces students to financial accounting, including the sources, applications, and limitations of accounting information used by managers within the firm and investors outside the firm.

Prerequisite(s): Graduate standing and restricted to Business - MBA and MSF majors only.

Grading: Letter Graded

BUS 220A - Financial Statement Analysis

3 unit(s)

Focuses on interpretation and analysis of financial information. Examines the relationship between financial statement information and capital markets, merging traditional valuation methodologies and technological advances.

Prerequisite(s): Graduate standing in MS Accountancy or MS Finance programs.

Grading: Letter Graded.

BUS 220B - Financial Reporting and Analysis I

3 unit(s)

Principles, control and theory of accounting for assets; correction of prior year's earnings; measurement and determination of income.

Prerequisite(s): MSA classified standing.

Grading: Letter Graded

BUS 220C - Accounting Information Systems I

3 unit(s)

Will provide conceptual framework concerning contemporary accounting information systems including: database concepts, internal control, use of systems technology, applications, management, systems analysis/design and auditing.

Prerequisite(s): MSA classified standing.

Grading: Letter Graded

BUS 220E - Financial Reporting and Analysis II

3 unit(s)

Continuation of Financial Reporting and Analysis I. Principles, controls, and theory of accounting for liabilities and equities; preparation, utilization, and analysis of cash flow statements; financial ratios and statistical analysis of financial statements accounting data.

Prerequisite(s): MSA classified standing.

Grading: Letter Graded

BUS 220F - Management Accounting and Control Systems

3 unit(s)

Provides the student techniques with an overview of the concepts and procedures of cost accounting relevant to managerial decision-making. Emphasizes planning and control, inventory valuation and income determination, and performance measurement.

Prerequisite(s): MSA classified standing.

Grading: Letter Graded

BUS 220G - Tax Factors of Business and Investment Decisions: Theory and Practice

3 unit(s)

Introduces essentials of tax research methodology, focusing on taxation of corporations and shareholders. Includes taxation of property transactions, deferral techniques, accounting periods, and accounting methods.

Prerequisite(s): MSA classified standing.

Grading: Letter Graded

BUS 220H - Auditing: Concepts and Practice

3 unit(s)

Discusses the public accounting profession and its socio-economic role; auditing techniques with an emphasis on EDP environment; audit procedures, practice and programs; working paper preparation; unqualified and qualified report writing.

Prerequisite(s): MSA classified standing. Graduate Standing only.

Grading: Letter Graded

BUS 220I - Forensic Accounting

3 unit(s)

Course will examine the frauds perpetrated on companies and methods of discovery. The criminal justice system will be reviewed and litigation support services provided by accountants to attorneys, including damage computations and testifying techniques and skills will be covered.

Grading: Letter Graded

BUS 220J - Business Communications & Ethics

3 unit(s)

Emphasizes communication effectiveness and skill building for influencing and guiding people. Includes fundamental skill building in researching, organizing and writing reports, making persuasive presentations that are sensitive to the needs and requirements of clients, peers and managers.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): MSA classified standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

BUS 220K - Accounting Practicum

3 unit(s)

The Accounting Practicum is an internship with an accounting firm or corporate finance group. This provides opportunities to apply program content to real-world environments, gain appreciation of work expectations and demands, and relate field experience to remaining program curriculum.

Prerequisite(s): MSA classified standing.

Grading: Credit/No Credit

BUS 220M - Accounting Ethics

3 unit(s)

Examines professional ethical standards for accountants. Focuses on professional codes of conduct and

workplace decisions for professionals in the fields of auditing, managerial accounting and taxation.

Prerequisite(s): BUS 220H, Graduate Standing only.

Grading: Letter Graded

BUS 220P - Taxation of Individuals and Flow-Through Entities

3 unit(s)

Taxation of individuals and pass-through entities (partnerships, LLCs, S corporations, estates and trusts) with emphasis on unique rules and factors in the Internal Revenue Code and Treasury Regulations.

Prerequisite(s): MSA classified standing.

Grading: Letter Graded

BUS 220R - Data Analytics for Accounting

3 unit(s)

Technology to store and analyze accounting data including relational and non-relational databases. Analysis and visualization of structured and unstructured data using modern methodologies such as snowflake schemas, sentiment analysis, process automation, and transaction analysis.

Prerequisite(s): BUS 220C or equivalent. MSA Graduate program standing.

Grading: Letter Graded.

BUS 220S - Financial Reporting and Analysis III

3 unit(s)

Accounting for multi-unit operations: consolidated reporting issues, transfer pricing issues, globalization issues (foreign tax structures, organizational forms and international accounting), translation of foreign currency transactions and operations, hedging foreign currency exposures, goodwill and brief exposure to business combinations.

Prerequisite(s): MSA classified standing.

Grading: Letter Graded

BUS 220U - Information Technology Audit

3 unit(s)

Analytical methods to assess risk and controls for computerized accounting information systems. Artificial intelligence to identify patterns and assist in the audit of structured and unstructured data. Generative AI for audit support.

Prerequisite(s): MSA Classified Standing.

Grading: Letter Graded.

BUS 220V - Special Topics in Accounting

3 unit(s)

Current special topics in accounting including an understanding of the financial accounting policies and procedures followed by state, county, and municipal governments, universities, and other non-profits for accounting and budgeting of the receipt and expenditure of tax and related revenues.

Prerequisite(s): MSA Classified Standing.
Grading: Letter Graded

BUS 220X - Business Analysis and Valuation Using Financial Statements

3 unit(s)

Development of Accounting based valuation framework that integrates a firm's strategy, accounting performance, and value; assessing a firm's value proposition and identifying key value drivers and risks; evaluating degree to which a firm's accounting policies capture the underlying business reality.

Prerequisite(s): MSA classified standing.
Grading: Letter Graded

BUS 220Z - Advanced Data Science and Analytics for Accounting

3 unit(s)

Advanced data science and analytics to solve real-world problems. Using software development kits (SDKs), extract, transform, and load data (ETL) to create and populate database schemas. Use supervised and unsupervised ML and AI techniques to conduct predictive analytics, Monte Carlo simulations, decision trees, prediction, classification and clustering. Visualize and present analysis results with the help of generative AI tools.

Prerequisite(s): Graduate standing in MS Accountancy program.
Grading: Letter Graded.

BUS 222 - Profit Planning and Control

3 unit(s)

Course covers how financial planning and control systems operate, and are used to deploy strategy, align interests, improve operations, and facilitate strategic change, maximizing firm value. Includes disciplined processes of decision-making, resource allocation, performance measurement to link strategy, management action, and shareholder accountability.

Prerequisite(s): BUS 220 and graduate standing.
Grading: Letter Graded

BUS 223A - Tax Research and Decision Making

3 unit(s)

Develops basics for tax research and evaluates the interrelationships of statutes, regulations, rulings and court cases. Identifies tax services and other primary research materials with emphasis on their use in tax decision-making. Emphasizing critical thinking and communication skills.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing.
Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

BUS 223B - Taxation of Partnerships

3 unit(s)

Income tax treatment of partners and partnerships and LLCs, including the creation, operation, liquidation and sale or other amalgamation of organizations. Special allocation and non-recourse debt arrangements are also covered.

Prerequisite(s): BUS 223A and BUS 223G

Grading: Letter Graded

BUS 223F - Tax Accounting Methods/Periods

3 unit(s)

Definition and importance of accounting methods and periods; timing rules for income, expenditures, inventory and R&D; change procedures; special methods; book-tax differences; introduction to provision for income taxes.

Pre/Corequisite(s): BUS 223A

Grading: Letter Graded

BUS 223G - Taxation of Business Entities

3 unit(s)

Income tax treatment of different types of business entities and their owners. Focuses on operations, reporting, formation, restructuring and termination. Selected special state and international tax rules, tax planning, and underlying tax policies also covered.

Corequisite(s): BUS 223A

Grading: Letter Graded

BUS 223H - Tax Policy Capstone

3 unit(s)

Capstone course that examines the principles and policies that underlie and shape tax systems and rules. Students gain a broader perspective of the tax law beyond its technical application, and learn how tax, economic, social and environmental policies interact.

Prerequisite(s): BUS 223A, BUS 223F, BUS 223G

Grading: Letter Graded

BUS 225A - Taxation of Estates and Trusts

3 unit(s)

Excise and transfer tax treatment of estates, gifts, trusts, creators, beneficiaries and fiduciaries. Distinguishes between revocable and irrevocable trusts, including proper trusts to achieve desired goals. Reviews taxation of asset sales and dissolution or liquidation of estates or trusts. Analyzes estate evaluation, family limited partnerships, trusts, GST, and planning opportunities.

Pre/Corequisite(s): BUS 223A

Grading: Letter Graded

BUS 225B - Taxation of Corporate Reorganizations

3 unit(s)

Income tax treatment of corporate reorganizations and amalgamations, including acquisitions, tax-free and taxable as well as corporate division. Tax treatment of net operating losses, earnings and profits, property basis and other corporate attributes.

Prerequisite(s): BUS 223A and BUS 223G

Grading: Letter Graded

BUS 225C - International Tax - US Corporations with Foreign Activities

3 unit(s)

Taxation of outbound investment and activities of the US corporations. Topics include sourcing, foreign tax credit, subpart F, Sections 482 and 367, foreign currency, establishing foreign operations, state taxation of outbound operations, and issues affecting expanding US multinational technology firms.

Prerequisite(s): BUS 223G and BUS 225W

Grading: Letter Graded

BUS 225E - Data Analytics and Security

3 unit(s)

Understanding and hands-on practice of identifying and using data for tax and accounting applications, when and how to use, practice with key tools. Understand security issues in tax work and practices and tools for avoiding problems.

Prerequisite(s): MST Graduate Standing

Grading: Letter Graded

BUS 225F - State Taxation Fundamentals

3 unit(s)

Introduction to the legal foundation, nature and operation of key state and local taxes. Constitutional constraints regarding nexus, sourcing and apportionment are covered. Additional topics include research techniques, compliance and planning considerations, current issues and state tax reform.

Pre/Corequisite(s): BUS 223A

Grading: Letter Graded

BUS 225G - Taxation of S Corporations

3 unit(s)

Topics include: Income tax treatment of S Corporations and their shareholders, built-in gains tax and excess net passive income tax; operating and distribution rules, shareholders basis, NOL pass-through rules; formation, reorganizations, QSUBS, and state income tax consequences.

Prerequisite(s): BUS 223A and BUS 223G

Grading: Letter Graded

BUS 225H - Taxation of Property Transactions

3 unit(s)

Key rules and planning considerations of property development, transfer, lease, abandonment, worthlessness, and destruction; depreciation and amortization; special types of intangibles and relevant tax rules; property indebtedness; sale of a business; tax-deferred transactions; sale of a principal residence; and basics of non-income taxes applicable to property and property transactions.

Pre/Corequisite(s): BUS 223A

Grading: Letter Graded

BUS 225I - Tax Practices, Penalties and Procedures

3 unit(s)

Procedures applicable to filing returns, amended returns and claims for refund. Also covers key procedural matters governing examinations, appeals, and adjudication of disputes. Relevant penalty provisions and rules of conduct are also examined. While the focus is on federal rules, key procedural differences in California law are also covered.

Pre/Corequisite(s): BUS 223A

Grading: Letter Graded

BUS 225K - Advanced Individual Taxes

3 unit(s)

Course includes interest tracing, passive activity losses, net operating losses, divorce, AMT's impact on individuals and individual California income taxes.

Pre/Corequisite(s): BUS 223A, Graduate Standing only.

Grading: Letter Graded

BUS 225L - Accounting for Income Taxes

3 unit(s)

Financial accounting rules regarding the calculation and presentation of a company's provision for income taxes.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 225P - Advanced International Tax - US Corporations

3 unit(s)

Advanced study of income tax treatment of international corporate transactions including international reorganizations and Section 367, Section 304 and corporate inversions. Planning for intangibles, subpart F planning, foreign entity structuring including use of check-the-box entities, foreign currency transactions, and foreign tax credit planning.

Prerequisite(s): BUS 223A and BUS 225C

Grading: Letter Graded

BUS 225Q - Tax Practicum

3 unit(s)

Internship with an accounting firm or corporate tax department. Provides opportunities to apply program content to real-world environments, gain appreciation of work expectations and demands, and relate field experience to remaining program curriculum.

Prerequisite(s): BUS 223A and BUS 223G.

Grading: Credit/No Credit

BUS 225S - Consolidated Returns

3 unit(s)

Review and analysis of theory, rules and practice involving affiliated entities and filing of consolidated returns.

Prerequisite(s): BUS 223A and BUS 223G

Grading: Letter Graded

BUS 225U - Fundamentals of Transfer Pricing

3 unit(s)

Introduction to the fundamental principles of intercompany pricing, applications of transfer pricing methods to related party transactions under U.S. transfer pricing regulations and OECD Guidelines, and the economic analysis required for intercompany transactions of multinational corporations.

Prerequisite(s): BUS 223A and BUS 225W

Grading: Letter Graded

BUS 225V - Tax Considerations for High Tech Companies

3 unit(s)

Explores the nature of high tech companies, special features, and why tax issues exist. In depth learning about tax incentives for innovation including the research credit, treatment of intangibles, stock options, multi-stage financing, multijurisdictional considerations, and book-tax differences.

Prerequisite(s): BUS 223A

Grading: Letter Graded

BUS 225W - Introduction to International Taxation

3 unit(s)

Introduction to the structure, basic rules, and policies of the federal income tax system with respect to international transactions of US and foreign persons. Topics include residency, sourcing, tax treaties, foreign tax credit, transfer pricing, and compliance.

Prerequisite(s): BUS 223A, BUS 223G

Grading: Letter Graded

BUS 225X - International Taxation - US and Foreign Individuals

3 unit(s)

Taxation of US and foreign individuals with investments and activities outside their home country. Topics include FTC, treaties, withholding taxes, US expatriates, foreign nationals, mobile employees, and compliance considerations, including US Bank Secrecy Act, FATCA and PFICs.

Prerequisite(s): BUS 223A and BUS 225W

Grading: Letter Graded

BUS 227A - Individual Tax Compliance

1 unit(s)

Basics of federal income tax compliance from information gathering to return filing. Includes practice preparing various individual forms and schedules, software tools, engagement letters, rules of conduct, disclosures, record keeping, key California adjustments, and completion of a moderately complex Form 1040.

Corequisite(s): BUS 223A.

Grading: Letter Graded

BUS 227B - Ethics for Tax Practitioners

1 unit(s)

Review of rules of conduct, tax penalties and professional ethical behavior relevant to tax compliance and planning. Key rules applicable to a CPA are covered in the context of their application in the day-to-day work of a tax practitioner.

Prerequisite(s): Graduate Standing only.

Corequisite(s): BUS 223A.

Grading: Letter Graded

BUS 227C - Tax Symposium

1 unit(s)

Tax symposium topics may vary from year to year to allow for focus on new developments or special tax topics. Check the MST schedule for the topic description.

Course may be repeated for credit for up to 3 units.

Corequisite(s): BUS 223A.

Grading: Letter Graded

BUS 227D - Employment Taxation and the Modern Workforce

1 unit(s)

An overview to the types of employment tax and related issues that can arise for companies and workers when employees telecommute or have multiple work locations. The basics of federal employment taxes are covered along with worker classification rules as well as selected state and international tax issues and rules relevant for today's workforce.

Pre/Corequisite(s): BUS 223A

Grading: Letter Graded

BUS 227E - Foundation for Understanding Taxation

1 unit(s)

Legal foundation of taxes, types of taxes, and underlying theories, definitions and concepts. How to analyze transactions and activities for tax consequences. Helps strengthen one's overall understanding of taxation and application of analytical skills to resolving tax issues.

Prerequisite(s): Undergraduate tax course

Grading: Letter Graded

BUS 227F - Personal and Business Leadership Skills for Tax Practitioners

1 unit(s)

Learn the intrapersonal and interpersonal skills and knowledge a tax practitioner needs for personal and professional success. Includes listening, oral and written communication, ethical reasoning, relationship and team building, establishment and assessment of accountability measures, time management, and career planning.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

BUS 227G - Tax Compliance & Planning (TCP)

1bus unit(s)

Course is designed for students preparing for the Tax Compliance & Planning (TCP) portion of the CPA exam. Content focuses on exam areas not covered elsewhere in the MST program, exam preparation strategies, and tax planning for individuals and business entities for both exam prep and tax practice.

Pre/Corequisite(s): BUS 223A, BUS 223G.

Grading: Letter Graded.

BUS 230 - Marketing Management

3 unit(s)

Fundamental concepts and skills required for understanding markets and managing marketing efforts. Includes market orientation, consumer and industrial buyer behavior, market segmentation, target market identification, product development, pricing, distribution channels, marketing communication, strategy development, and marketing planning and control.

Prerequisite(s): Graduate standing. Restricted to Business - MBA majors only

Grading: Letter Graded

BUS 231 - Consumer and Market Behavior

3 unit(s)

Influence of consumer behavior upon marketing management strategy; examination of behavioral concepts as they relate to purchase decisions; types of consumer research instructions and applications; focus on buyer behavior in action-oriented environments.

Prerequisite(s): BUS 230 and graduate standing.

Grading: Letter Graded

BUS 233 - Business to Business Marketing

3 unit(s)

Course deals with business-to-business marketing, that is, the marketing of goods, services, and ideas to business and non-retail institutions. Covers product, price, promotion and distribution with emphasis on strategy development and marketing decision-making.

Prerequisite(s): BUS 230 and graduate standing.

Grading: Letter Graded

BUS 234A - Social Media Marketing

3 unit(s)

Approaches to social media marketing. Benefits and opportunities companies face as online social networking influences company marketing strategies. Use of emerging technology to promote brand awareness and strategies for social recovery.

Grading: Letter Graded

BUS 235A - Introduction to Business Analytics

3 unit(s)

Many successful companies derive their competitive edge from the innovative use of business analytics. Students will master several fundamental skills for business analytics: data manipulation, data visualization, and statistical modeling. Students will make extensive use of the R statistical environment, a cutting-edge business analytics tool.

Prerequisite(s): Graduate Standing only.

Grading: Letter Graded

BUS 235B - Business Research

3 unit(s)

This course introduces participants to 21st Century business research methodology. The emphasis here is not on issues related to ongoing data sources but rather to unique, one-time problems that are best solved with custom research projects. Quantitative methods are emphasized but the advantages of the qualitative perspective are not overlooked. Other topics include questionnaire design, data collection, analysis, and presentation, highlighting appropriate new technology. The aim is to prepare managers to conduct research as well as to enable them to engage collaboratively with their research consultants.

Prerequisite(s): Graduate Standing only.

Grading: Letter Graded

BUS 235C - Data Mining for Business Analytics

3 unit(s)

Data mining is used to discover patterns and relationships in data. Emphasis is on large complex data sets such as those in transactional databases or gathered through web mining. Topics: data visualization, association rules, clustering, and various modern classification techniques.

Prerequisite(s): Graduate Standing only.

Grading: Letter Graded

BUS 235D - Business Analytics Simulation

3 unit(s)

Transforming diverse data into knowledge-driven business decisions. Participants make tactical and strategic decisions based on consumer, competitor, aggregate market, financial, etc. Success is gauged by monitoring a dashboard that includes manufacturing productivity, return on investment, investment in the future, market share, product quality, financial performance, etc.

Prerequisite(s): Graduate Standing only.

Grading: Letter Graded

BUS 235E - Data Visualization and Management

3 unit(s)

Learn the essential SQL and Tableau skills for business analytics. Use SQL to select, filter, sort, aggregate, and join data. Learn a variety of visualization methods in Tableau, including building interactive Dashboards and telling stories with data.

Grading: Letter Graded

BUS 235F - Forecasting for Business Analytics

3 unit(s)

Learn about time series and forecasting methods for business. Identify trends and seasonal patterns. Perform smoothing, regression modeling, and ARIMA using modern business analytics software.

Grading: Letter Graded

BUS 237 - Sales Management

3 unit(s)

Learn to recognize and capitalize on emerging market opportunities. Develop ability to manage different personality types, enhance communication skills, and increase cultural sensitivity. Sales forecasting, training, motivational techniques, and ethics.

Grading: Letter Graded

BUS 240 - Electronic Commerce

3 unit(s)

Focuses on organizational uses of information technology, impacts of IT on organizational operations and strategies, and increasing importance of Internet in business activities. Covers fundamentals of IT, organizational applications of IT and Internet, and successfully developing and implementing IT-based applications.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 243 - Database Management

3 unit(s)

Introduction to database approach of planning, design and implementation of information systems applications in organizations from the viewpoint of the manager as a knowledgeable user. Includes data modeling, data integrity and practical project assignments.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 244 - Information Technologies for Business: Essentials & Emerging

3 unit(s)

Exposes students to a range of technologies, assignments, and case studies that will help them develop the skills and knowledge needed to leverage technology in their own business fields. By gaining a solid understanding of technology in business, students will be equipped to succeed in the modern workplace and contribute to the growth and success of their organizations.

Prerequisite(s): Graduate standing. Restricted to Business - MBA Students.

Grading: Letter Graded.

BUS 247 - Big Data Management

3 unit(s)

Exploration of Big Data and how businesses are succeeding (or failing) in using it. Learn to extract value from Big Data by getting data ready for analysis ("data wrangling"), and by understanding and communicating the business value.

Grading: Letter Graded

BUS 248 - Cyber Risk Management

3 unit(s)

This course surveys cyber risk management concepts and best practices. Topics include cyber security threats, countermeasures, vulnerabilities, cost/benefit analysis, incident handling/response, business contingency planning, ethics, and legal imperatives within the organizational context.

Grading: Letter Graded

BUS 250 - Law and Ethics

3 unit(s)

Course focuses on both law and ethics in the business environment, how individuals and organizations approach law and ethics, as well as the ethical, legal and social consequences of disregarding law and ethics in favor of other objectives.

Prerequisite(s): Graduate standing. Restricted to Business - MBA majors only

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

BUS 251 - Strategic Human Capital Performance Management

3 unit(s)

This course utilizes case and research discussions as well as quantitative costing and utility analyses to develop practical skills in the global deployment of human resources to achieve and sustain strategic competitive advantage.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 252 - Managing Organizational Change

3 unit(s)

The focus will be upon applied organizational change by covering organizational behavior from a normative, policy-oriented perspective. The perspective will be one of viewing the person (student) as an actual or potential change agent; a consultant (internal or external), innovative personnel specialist, or middle or top level manager.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 253 - Negotiation and Conflict Management

3 unit(s)

Introduces a theoretical framework and skill-building exercises/simulations for negotiating agreements in adversarial or competitive relationships. Explores conflict resolution methods applicable to commercial transactions, employee relations, union management negotiation and contract disputes, as well as international diplomacy.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 255 - Diversity in the Workforce

3 unit(s)

Analysis of communication, leadership, motivation, group dynamics, decision-making, problem solving, training, change, conflict resolution and other behavioral concerns as they apply to the management of the multicultural workforce.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 260 - Managerial Decision Analysis

3 unit(s)

Concerns the inherent complexities in the process of choice. Covers decomposition of the decision environment, the use of decision trees, value theory, analysis of criterion, the statistical measurement of risk and uncertainty, preposterior analysis, and problems of collective choice.

Prerequisite(s): Business statistics and graduate standing; restricted to Business - MBA majors only

Grading: Letter Graded

BUS 262 - Leadership

3 unit(s)

Explores classic and contemporary models of leaders and leadership and defines the difference between management and leadership. Practical applications of theory emphasizing the contingency perspective.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 262A - Global Leadership and Innovation

3 unit(s)

A focused approach to how global leadership fosters innovation and global change. The course integrates a business, industry, and ecosystem perspective on leading innovation and change. A variety of learning tools including analysis of case studies and the development of actionable consultative reports. Participants learn how to foster innovation at all levels of the organization, in themselves, and in those they lead in global industries. Counts towards Advanced Global Leadership Certificate.

This course provides an in-depth introduction to global leadership and its development and to fostering innovation and global change. Through assessments and behavioral simulations, it prepares students to do global work effectively in a complex context with people from various cultures.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 262B - Global Leadership Development

3 unit(s)

Development of leadership skills for personal self-awareness and organizational growth outcomes required in innovative global environments. The course explores classic and contemporary models of leadership in a multi-domain context using evidence-based management approaches. Emphasizes the experiential nature of applying these skills in organizations to address the challenges in the innovative global workplace. Counts towards Advanced Global Leadership Certificate.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded.

BUS 265 - Silicon Valley Experience

2 unit(s)

This course is designed to develop the "whole student" for success in the business world, including professionalism, ethics, case competitions, communications, networking, career success, and work/life balance. It includes lectures, speakers, panels, competitions, and other events providing students with an in-depth exposure to Silicon Valley.

Grading: Letter Graded

BUS 265F - Silicon Valley Experience for Finance Professionals

1 unit(s)

Develop the "whole student" for success in the business world, including professionalism, ethics, case competitions, communications, networking, career success, and work/life balance. Includes lectures,

speakers, panels, competitions, and other events providing students with an in-depth exposure to Silicon Valley.

Grading: Letter graded.

BUS 265P - Silicon Valley Experience for Professionals

1 unit(s)

Supports professionals as they advance into managerial roles. Focus is on advanced soft-skills, communication skills, career planning, and leadership development. Class consists of roundtable discussions, career coaching, presentation feedback, and soft-skills workshops. Speaker events and company visits are also incorporated.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded

BUS 268 - Managing Across Cultures

3 unit(s)

A comprehensive foundation for understanding, managing, and successfully interacting in the multi-faceted, culturally-embedded contexts of multinational firms. Understanding major issues facing multinational corporations in the management of international operations including what fosters innovative environments; insights into cultural, historical and institutional factors; managing innovation across cultures; skills for working effectively in international multicultural teams. Counts towards Advanced Global Leadership Certificate.

Prerequisite(s): Graduate standing.

Grading: Letter Graded.

BUS 270 - Financial Management

3 unit(s)

Introduces the structure, markets and regulatory factors within the financial system. Develops basic skills in preparing financial plans/budgets, valuing capital costs, financial assets and evaluating the firm's capital structure, cost of capital, working capital, dividend policies, financing and investment decisions.

Prerequisite(s): Graduate standing; restricted to Business - MBA and MSF majors only.

Corequisite(s): BUS 220

Grading: Letter Graded.

BUS 270A - Financial Planning and Analysis

3 unit(s)

Introduces financial metrics, analytic tools, and use of accounting information for financial analysis, budgeting, forecasting, and control. Develops skills to provide management with the relevant financial information for the efficient and profitable use of the company's resources.

Prerequisite(s): BUS 270.

Grading: Letter graded.

BUS 270B - Financial Derivatives for Corporate Finance

3 unit(s)

Introduces financial derivatives such as forwards, futures, options, and swaps at a graduate level with a special emphasis on the application to corporate finance. Financial derivatives will be applied not only to valuation of various securities, but also to capital budgeting, compensation, raising capital, and financial risk management.

Prerequisite(s): BUS 270.

Grading: Letter graded.

BUS 270C - Financial Modeling and Data Visualization

3 unit(s)

Presents the practical application of financial management theories and concepts. Emphasis is placed on computer-based modeling and forecasting using MS Excel, machine learning, and other tools to forecast the impact of financial decisions concerning financial statement analysis, capital budgeting, cost of capital, and capital stock allocation. Variety of techniques such as sensitivity and scenario analysis, optimization methods, and regression analysis are used throughout the course.

Prerequisite(s): BUS 270.

Grading: Letter graded.

BUS 270D - Case Studies in Corporate Finance

3 unit(s)

Advanced study of corporate finance case materials integrating finance theory and business practice. Use of statistical techniques to analyze big data in case studies. Apply best practices in financial analytics, project management, information management and knowledge management. Topics include assessing financial conditions; valuation, cash flow, and capital budgeting analysis; and decision-making pertaining to working capital, capital expenditures, capital allocation, capital structure, payout policy, IPOs, mergers, acquisitions, divestitures, FinTech, ethics, and corporate governance.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): BUS 270.

Grading: Letter graded.

Note(s): This course satisfies graduate-level GWAR in this master's program.

BUS 270S - Special Topics in Finance

3 unit(s)

Special topics in finance to augment regularly-scheduled electives in the MS Finance program.

Course may be repeated for credit up to 9 units.

Prerequisite(s): Graduate standing.

Grading: Letter graded.

BUS 273 - Business Valuation

3 unit(s)

Course uses accounting and market data to determine the value of public and private businesses. The course considers methods and models whereby business values are created and destroyed. Techniques, from basic rules of thumb to holistic computer models are considered.

Prerequisite(s): BUS 220 and BUS 270.

Grading: Letter Graded

BUS 276 - New Venture Finance

3 unit(s)

New ventures face different business and financing environments than large, publicly-traded firms. The risk of R&D failure is more severe for new ventures. Examines how business and financing decisions are intertwined. Topics: Venture capital, joint ventures and intrapreneurship.

Prerequisite(s): BUS 270 and graduate standing.

Grading: Letter Graded

BUS 277 - Investment Analysis and Management

3 unit(s)

Principles of financial and portfolio analysis applied to investments in common stocks and bonds. Descriptive characteristics of financial markets reviewed, with main emphasis on application of financial theory and statistics to understanding movements in security prices and portfolio values. A financial management viewpoint will be taken in conducting fundamental valuation analysis and formulating portfolio policy.

Prerequisite(s): BUS 270 and graduate standing.

Grading: Letter Graded

BUS 280 - Operations and Supply Chain Management

3 unit(s)

Analysis of effective and efficient flow of materials, products, services, and information within and across organizations. Includes: process flow analysis, capacity planning, quality, lean supply chain, layout, aggregate planning, supply chain networks, inventory management, sourcing, ERP, and logistics planning.

Prerequisite(s): Graduate standing. Restricted to Business - MBA majors only

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

BUS 280IS - Independent Study

1-6 unit(s)

Independent study for the student with a specific project in mind, in an area not covered by existing coursework. The student must submit a one-page formal proposal to be accepted by an assigned faculty member and approved by the appropriate graduate program director. Number of units assigned are based on depth and breadth of project.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

BUS 282A - Essentials of Management and Organizational Behavior

3 unit(s)

Familiarizes students with the challenges that arise for managers in organizational settings; surveys theories and practices relating to managerial roles, organizational cultures, strategy, planning, team building, communication, motivation, leadership, decision-making, control, structure, and change.

Prerequisite(s): Enrollment in the MBT program.

Grading: Letter Graded

BUS 282B - Essentials of Operations Management

3 unit(s)

Familiarizes students with the role and importance of operations management and how it interacts with other parts of the organization; develops skills in applying analytical tools and techniques to operations management challenges.

Prerequisite(s): Enrollment in the MBT program.

Grading: Letter Graded

BUS 283 - Entrepreneurship

3 unit(s)

Examines the growth and nature of entrepreneurship and the support infrastructure of tasks, people, finances and technology. Emphasizes entrepreneur characteristics sought by venture capitalists and investors, role of the business plan and evolutionary stages of start-up activity.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 284 - Managing Product Development

3 unit(s)

Views product development as a cross-functional business process. Examines concepts used and management challenges faced in structuring product development activity and in strategically managing a portfolio of product development projects.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded

BUS 284C - Managing Medical Product Development

3 unit(s)

Views medical product development as a cross-functional business process. Examines concepts used and management challenges faced in structuring medical product development activity and in strategically managing a portfolio of medical product development projects. Examines industry practices and cases relevant to medical product development.

Prerequisite(s): Admission to MPDM program and completion of BUS 224C , BUS 286 and SMPD 289A.

Grading: Letter Graded

BUS 286 - Project Management

3 unit(s)

Covers both strategic and operational points of view for managing projects. Quantitative methods include project planning, budgeting, selection, scheduling, evaluation and control. Qualitative methods include project organization, staffing and team building.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

BUS 290 - Strategic Thinking

3 unit(s)

Integrative focus on managing the total enterprise, including corporate and business-level strategy formation. Applies market and industry analysis, using qualitative and quantitative techniques, to position companies in their competitive environment. Students create a strategic plan for on-going or new organization.

Prerequisite(s): Completion of BUS 201, BUS 202, BUS 210, BUS 220, BUS 230, BUS 250, BUS 260, BUS 270, BUS 280 and graduate standing; restricted to Business - MBA majors only. for MBA for Professional students: BUS 200W, BUS 202, BUS 210, BUS 220, BUS 230, BUS 250, BUS 260, BUS 270, BUS 280 and graduate standing; restricted to Business - MBA majors only.

Grading: Letter Graded

Note(s): Must receive a minimum grade of "B" on project.

Sustainability Related

BUS 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

BUS 294 - Management Simulation Competition

3 unit(s)

Developing analytical and general management decision-making skills as member of a team competing in the regional business schools' management simulation game. Extensive use of computers for simulation and analytical/planning tools.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

BUS 297A - Special Topics in Business Administration

1-4 unit(s)

Special topics to augment regularly-scheduled electives.

Prerequisite(s): Graduate standing and prerequisite courses as specified.

Grading: Letter Graded

BUS 297D - Special Topics in Business Administration

3 unit(s)

Special topics to augment regularly-scheduled electives.

Prerequisite(s): Graduate standing and prerequisite courses as specified.

Grading: Letter Graded

BUS 298 - Master's Project

3 unit(s)

Supervised completion of the Plan B (Project) culminating experience.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Advancement to Candidacy and instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

BUS 298C - Applied Business Experience Internship

3 unit(s)

The course provides students with an opportunity to translate their academic training into real world practice and gain overall knowledge of key functional areas of business. The internship must offer students a valuable learning experience and must significantly increase their knowledge of business organizations. Students are responsible for identifying a specific internship opportunity and obtaining an official offer from an employer. Upon approval from the MBA Director, the students will be able to enroll in the 3-unit course which will count as one of the MBA electives. The course requires the preparation of an internship journal & report. The internship qualifies as Curricular Practical Training (CPT) for international students.

Prerequisite(s): Advancement to Candidacy

Grading: Letter Graded

BUS 298I - Applied Business Experience Internship

1 unit(s)

For the student with a specific internship providing a quality experience that reinforces the curriculum and involves meaningful work. The student must submit a one-page formal proposal to the graduate program director. A final report is required. The internship must qualify as Curricular Practical Training (CPT) for international students.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): Approved advancement to candidacy.

Grading: Mandatory Credit/No Credit/RP

BUS 299 - Master's Thesis

1-4 unit(s)

Master's Thesis Plan A.

Prerequisite(s): Approval of the instructor and advancement to candidacy. Not available to Open University Students

Grading: Mandatory Credit/No Credit/RP

Business - Hospitality, Tourism and Event Management

HSPM 1 - Travel to Learn, Learn to Travel

3 unit(s)

Course examines the relations among tourists, locals, and the tourism industry and how the global tourism industry facilitates diverse travelers' travel experience from beginning to end. Focus on the industry's history, growth, development, impacts, trends, technology and career opportunity.

Grading: Letter Graded.

Sustainability Related - SDG 8: Decent Work and Economic Growth

HSPM 11 - Restaurant Entrepreneurship

3 unit(s)

The comprehensive process of conceptualizing, planning, starting, and managing a restaurant business. The topics cover business planning, operations, menu planning, staffing, marketing, and customer service.

Grading: Letter Graded.

HSPM 12 - Data Analytics in Restaurant Operations

3 unit(s)

A comprehensive exploration of the essential aspects of restaurant data, including sales trends, customer behavior, operational efficiency, marketing impact, financial management, employee performance, and menu optimization.

Grading: Letter Graded.

Cross-listed with NUFS 12. Hospitality Management is responsible for scheduling.

HSPM 20 - Sanitation and Environmental Issues in the Hospitality Industry

2 unit(s)

Sanitation in food service, hotel and travel/tourism industries; study of pathogenic organisms and food handling procedures. Occupational health, safety and environmental control in the hospitality industry.

Grading: Letter Graded

Cross-listed with NUFS 20. Nutrition, Food Science and Packaging is responsible for scheduling.
Sustainability Related - SDG 8: Decent Work and Economic Growth

HSPM 22 - Catering and Beverage Management

3 unit(s)

Planning and executing catering and buffet functions. Evaluation of alcoholic and non-alcoholic beverages regarding purchasing, storage, preparation, merchandising and regulations.

Misc/Lab: Lecture 2 hours /lab 3 hours.

Prerequisite(s): NUFS 20 or instructor consent.

Grading: Letter Graded

Cross-listed with NUFS 22. Nutrition, Food Science and Packaging is responsible for scheduling.

HSPM 65 - Professional Seminar in Hospitality Mgmt (To Be Inactivated after Fall 2022)

1 unit(s)

Designed for students who have declared a major in the Hospitality, Tourism and Event Management degree. The topics selected will facilitate the student's entry into the academic program and the profession of hospitality management.

Corequisite(s): HSPM 1.

Grading: Letter Graded

Note(s): This course is part of the teach out plan for the Hospitality, Tourism, and Event Management BS. It will be offered in Fall 2021 and Fall 2022. The course will subsequently be discontinued.

HSPM 86 - Special Events Management in Hospitality

3 unit(s)

Hands-on experience in the operation, coordination, and management of special events as they relate to hospitality and tourism. Students develop management skills and experience in planning and execution of a major event.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

HSPM 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to

study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

HSPM 101 - Multicultural & Intl Issues Hospitality

3 unit(s)

Multicultural/international issues in the hospitality industry; historical, socioeconomic, cultural and linguistic variables presented in relationship to these issues.

Grading: Letter Graded.

Sustainability Related - SDG 8: Decent Work and Economic Growth

HSPM 102 - Hotel & Lodging Operations

3 unit(s)

Principles of organization, management, and decision models applied to the tasks and challenges of hotel operations. Involves techniques of problem-solving (including planning, organizing, staffing, directing, and controlling operations) in areas of front office operations, housekeeping, food/beverage, and personnel.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

HSPM 108 - Hospitality Information Systems

3 unit(s)

Focuses on the application of various information systems to the management of facilities, programs, services, finances and accounting, products, marketing and sales, human resources and other major functions of hospitality, recreation, and tourism organizations/agencies.

Grading: Letter Graded

HSPM 111 - Customs and Courtesies in Hospitality

3 unit(s)

An exploration of a variety of customs and courtesies that demonstrate the influences of history, traditions, social customs, religious beliefs, language, and other cultural elements on hospitality service etiquette and manners in different cultures and countries.

Grading: Letter Graded

HSPM 130 - Special Event Planning

3 unit(s)

Planning and production of a special event related to tourism and hospitality. Topics include setting event goals, developing the event plan, site selection, event infrastructure, guest experience, event technology,

marketing, event analytics, budget, risk management, on-site management, and career opportunities.

Grading: Letter Graded

HSPM 140 - Corporate Event Management

3 unit(s)

Corporate event planning, production, and management through examinations of the corporate's goals and the planner's role. Topics include industry overview, types of corporate events, typical event components, technology, event branding and marketing, entertainment, guest experience, budgeting, evaluation, and career opportunities.

Grading: Letter Graded

HSPM 141 - Resort and Club Management

3 unit(s)

Management and operation of resort and private club properties from their historical development to their economic and environmental impact; marketing and managing of services provided by these facilities within the leisure industry.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

HSPM 142 - Trade Show and Exhibition Management

3 unit(s)

Management and operations of trade shows and exhibitions from the perspectives of show organizers and exhibitors. Topics include strategic goals setting, economic impacts, registration, marketing, floor plan design, booth design, exhibition technologies, sponsorships, sustainability, budget, evaluation, and career opportunities.

Grading: Letter Graded

HSPM 143 - Tourism Destination Marketing and Management

3 unit(s)

Principles of destination marketing and management in formulating strategies to promote tourism in a variety of locations. Appraising a destination's potential and developing a destination's products/services and marketing campaign to attract both business and leisure travelers.

Grading: Letter Graded

HSPM 148 - Wine Appreciation

3 unit(s)

Introduces the student to the significance of wine in the dining experience. The class will study the wine-making process, wine grape varieties, health and legal issues of wine and include in-class evaluation of wine.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

HSPM 149 - Beer Appreciation

3 unit(s)

Examining the history, business and economic impact of beer from its international brewery markets to the small craft beer distributors. Explore beer styles, regions, brewing processes and food pairings through weekly tastings and sensory applications of the principles of beer making.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

HSPM 152 - Hotel Catering and Banquet Management

3 unit(s)

Overview of hotel group sales, convention services, catering sales and banquet operations. Learn tools and applications necessary to be successful in providing catering and banquet operations for hotel, restaurant, or corporate events.

Grading: Letter Graded

HSPM 154 - Revenue Management

3 unit(s)

Formulating tactical pricing decisions to maximize revenues for hospitality organizations. Topics include: history of revenue management, reservation systems, forecasting demand, inventory control, cost analysis, pricing strategy, channel management, revenue management tactics, and applications.

Grading: Letter Graded

HSPM 155 - Sustainable Hospitality and Tourism Management

3 unit(s)

Concepts and principles of sustainable operations in tourism, hospitality, and event management organizations. Topics include the UN's 17 Sustainable Development Goals, socio-cultural, economic, and environmental dimensions of sustainable development, impacts of development, corporate social responsibility, and current trends/issues in sustainable operations.

Grading: Letter graded.

HSPM 161 - Cruise Operations and Management

3 unit(s)

This course examines the major aspects of cruise operations and management including history, global cruise market, economic significance, geography of cruising, itinerary design, anatomy of a cruise ship, operations, sales and marketing procedures, passenger services, event planning and management, and career opportunities.

Grading: Letter Graded

HSPM 168 - Gaming Management

3 unit(s)

Introduction to the casino's external environments and the casino's impact on the consumer and the local economy. Topics cover the history of gaming and gaming development, casino organization and operation, the mathematics of casino games, and casino management.

Grading: Letter Graded

HSPM 177 - Hospitality Service Management

3 unit(s)

Develop skills in setting formal service standards and procedures to deliver customer experience and evaluate service quality for hospitality businesses. Topics include service experience design, psychological/social characteristics of customer satisfaction, service delivery processes, consumer/server encounters, service quality, and service recovery.

Prerequisite(s): Senior standing.

Grading: Letter Graded.

HSPM 180 - Individual Studies

1-3 unit(s)

Investigation of special problems, including research projects and/or field experience.

Prerequisite(s): Instructor or department consent. Not available to Open University Students.

Grading: Credit/No Credit

HSPM 184 - Directed Reading

1-4 unit(s)

Directed reading in journals and books by authorities in Hospitality, Recreation, Tourism and related fields. Assessment by project(s) and/or paper(s).

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Instructor approval or department consent. Not available to Open University Students.

Grading: Credit/No Credit

HSPM 191 - Hospitality, Tourism and Event Management Internship

1-4 unit(s)

Supervised professional broad-based work experience in hospitality, tourism, or event management industry.

Course is repeatable for up to 4 units.

Prerequisite(s): Instructor or department consent.

Grading: Credit/No Credit

HSPM 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Business - Information Systems and Technology

BUS4 91A - Advanced Computer Tools for Business

1 unit(s)

Students learn advanced spreadsheet and presentation software skills through individual lessons and through application in team case projects.

Prerequisite(s): Basic Excel and PowerPoint skill proficiency

Grading: Credit/No Credit

BUS4 91L - Computer Tools for Business

1 unit(s)

Fundamentals of spreadsheet software through in-class exercises and individual assignments. Team projects to improve students' collaboration and communication skills, using online tools to produce slide and video presentations.

Grading: Credit/No Credit

BUS4 92 - Introduction to Business Programming

3 unit(s)

Analysis of business problems to design and implement the software component of an information system. Emphasis on structured design and programming.

Grading: Letter Graded

BUS4 92I - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

BUS4 110A - Fundamentals of Management Information Systems

3 unit(s)

Prepares students for upper division MIS courses by providing an overview of the strategic and managerial issues involved in the design, implementation, and maintenance of information systems. Includes an introduction to business application programming.

Prerequisite(s): BUS 92 , upper division standing.

Grading: Letter Graded

BUS4 110B - Systems Analysis and Design

3 unit(s)

Introduction to systems development methodologies, techniques and tools. Emphasis on enterprise, process, data and object modeling techniques. Students use UML and prototyping tools to analyze and design an information system.

Grading: Letter Graded.

BUS4 111 - Networking and Data Communications

3 unit(s)

Emphasis on the concepts, architectures, components, protocols and standards for message movement within information networks. Uses the network design process to develop understanding of business and information technology perspectives.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

BUS4 112 - Database Management Systems

3 unit(s)

Introduction to intermediate database management concepts, methods, and technologies, stressing the design and development of relational databases and data analysis. Emphasis on data modeling, data integrity, and SQL. Non-relational data and information management technologies are also introduced.

Grading: Letter Graded

BUS4 115 - Advanced Networking and Data Communications

3 unit(s)

Integration of telecommunications and database management systems concepts in a distributed information systems environment. Emphasis on information systems architectures, systems integration, open systems and other advanced topics.

Prerequisite(s): BUS4 111

Grading: Letter Graded

BUS4 116 - Advanced Database Management Systems

3 unit(s)

Advanced topics in relational data management and analysis including advanced SQL, PL/SQL, and database functions, procedures, and triggers; dimensional modeling, data warehousing, and data visualization; non-relational (NoSQL, big data) databases and data analysis.

Prerequisite(s): BUS4 112

Grading: Letter Graded

BUS4 118A - Cloud Computing for Data Professionals

3 unit(s)

Introduces concepts, terminology, and hands-on components of the cloud infrastructure including compute, storage, networking, security, and compliance on a major cloud platform such as Microsoft Azure. The course also introduces topics in relational and non-relational data, AI, and analytics workloads on the cloud.

Prerequisite(s): BUS4 92 and BUS4 112.

Grading: ABC-/No Credit

BUS4 118B - Business Intelligence

3 unit(s)

Applied business analytics for enterprise performance management and decision support. Perform descriptive and predictive analysis using statistical, computing, data mining, and data visualization techniques to address business issues. Emphasis on hands-on work and business use cases.

Prerequisite(s): BUS4 112

Grading: Letter Graded

BUS4 118C - Information Security and Assurance Management

3 unit(s)

Introduces the spectrum of threats and associated best practices for managing information security and assurance in organizations. Covers use of education/training, policy/procedure and technology to balance information confidentiality, integrity and accessibility requirements against associated costs to support organizations' strategic goals.

Corequisite(s): BUS4 111

Grading: Letter Graded

Note(s): Offered only occasionally.

BUS4 118D - Big Data

3 unit(s)

How to formulate business questions and use current Big Data analytics technologies through hands-on assignments to wrangle, query, and graph relationships using a large unstructured dataset. Issues relating to developing the business proposition, Big Data strategies, and ethical considerations.

Prerequisite(s): BUS4 112

Corequisite(s): BUS4 110A

Grading: Letter Graded

BUS4 118H - Honors Practicum in MIS I

3 unit(s)

Honors student teams formulate, develop and initiate implementation of an MIS project for an organization in our community. Requirements include using industry-standard project management tools and methods, interacting with project stakeholders in a professional manner, and applying appropriate technical skills/processes to the project.

Prerequisite(s): BUS4 110A, BUS4 110B, 100W, admission to MIS Honors Program

Corequisite(s): BUS4 112

Grading: Letter Graded

BUS4 118I - Artificial Intelligence (AI) for Social Good

3 unit(s)

Leverages multidisciplinary knowledge - design thinking, cutting-edge information technologies, social innovation - to address important social problems. Use of design thinking, including identifying problems through user interviews, creating prototypes using emerging technologies, and validating the solutions through user research. Hands-on experience with emerging technologies, such as AI and IoT.

Prerequisite(s): BUS4 110A

Grading: Letter Graded

BUS4 118S - Special Topics in MIS

3 unit(s)

Special topics to augment regularly scheduled electives. Course is repeatable for credit, maximum 9 units.

Course is repeatable for up to 9 units.

Prerequisite(s): BUS4 111; BUS4 112; and COMM 100W or ENGL 100WB or LLD 100WB.

Grading: Letter Graded

BUS4 118W - Web Based Computing

3 unit(s)

Explores Web applications for personal, E-Commerce and corporate computing. Covers essentials of WWW protocols. Students will learn to design and program both client and server-side applications using HTML and extensions, JavaScript, Perl, VBScript, Active Server Pages, database connections, XML, Java.

Prerequisite(s): Grade of "C" or better in BUS4 110A and BUS4 112.

Grading: Letter Graded

BUS4 119A - Practicum in MIS

3 unit(s)

Students, working in teams, complete an MIS project for a community organization. Requirements include using industry-standard project management tools and methods, interacting with project stakeholders in a

professional manner, and applying appropriate technical skills and processes to the project.

Prerequisite(s): Any 100W or equivalent; BUS4 110A, BUS4 110B, BUS4 111 and BUS4 112 (all with a C or Better).

Grading: Letter Graded

BUS4 119B - Business Strategy and Information Systems

3 unit(s)

Analysis of the effective use of information systems and technology for competitive advantage by a business organization for enterprise, business-to-business, and e-Commerce computing. Emphasis on integration of information systems and technology with business strategy, financial justification, personnel and organizational considerations. Intended for the last semester before graduation.

Prerequisite(s): Any 100W or equivalent, BUS4 110A, BUS4 110B, BUS4 111, BUS4 112

Grading: Letter Graded

BUS4 119H - Honors Practicum in MIS II

3 unit(s)

Honors student teams develop and complete implementation of an MIS project for an organization in the community initiated in 118H. Requirements include using industry-standard project management tools and methods, interacting with project stakeholders in a professional manner, and applying appropriate technical skills/processes to the project.

Prerequisite(s): BUS4 118H

Grading: Letter Graded

BUS4 180I - Individual Studies MIS

1-4 unit(s)

Prerequisite(s): Not available to Open University Students

Grading: Credit/No Credit.

BUS4 188 - Business Systems and Policy

3 unit(s)

Provides system perspective on organizations, using information as an integrating vehicle. Examines how information systems can serve business functions and integrate value chain activities.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB

Pre/Corequisite(s): Fundamental courses

Grading: Letter Graded

Sustainability Related

BUS4 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International

Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Business - Management

BUS3 10 - Discovering Business

3 unit(s)

Simulates setting up a small business to explore the many facets of an enterprise (marketing, accounting, finance, management, information systems, etc.). Through self-assessment and readings, directs students toward career paths that best reflect their personal aptitudes and interests.

Prerequisite(s): Highly recommended for SJSU freshman business majors, optional for others.

Grading: Letter Graded

BUS3 12 - Managing My life

3 unit(s)

An interdisciplinary course in personal development that introduces basic concepts and practical skills for improving and enhancing life during college and beyond. The course includes how to succeed in college, manage one's finances, plan one's career, manage stress, and increase overall happiness and well-being.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

BUS3 80 - Legal Environment of Business

3 unit(s)

Understand the judicial system and dispute resolution with emphasis on the role of law in purchasing, contracting and administering a business as it impacts the firm's constituencies and society as a whole.

Prerequisite(s): Sophomore status.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

BUS3 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad

and Away programs.

Grading: Mixed Grading

BUS3 149 - Negotiation and Conflict Resolution

3 unit(s)

Provides conflict resolving and negotiation techniques. Case studies demonstrate applications of these methods in real world business, personal, interpersonal and international situations. Emphasis on acquiring and improving skills.

Grading: Letter Graded

BUS3 150 - Fundamentals of Human Resource Management

3 unit(s)

Theories, concepts and processes of human resource management; specific topics include EEO, employee motivation, job analysis and work design, strategic human resource planning, recruitment and selection, talent assessment and development, performance management, compensation and benefits, OSH, and employee rights and discipline.

Prerequisite(s): BUS 91L or instructor consent. Upper division standing. Lower Division Business Pool or Business Minor.

Grading: Letter Graded

BUS3 151 - Labor Relations

3 unit(s)

Private sector union-management relations; labor history, basic labor economics. Legislative, judicial, administrative issues in collective bargaining; contract negotiations, grievance procedures, dispute resolution. Overview of public sector collective bargaining and comparative labor relations. Current trends, including labor-management cooperation.

Prerequisite(s): Upper division standing

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

BUS3 152 - Human Resources Analytics

3 unit(s)

Examines how Human Resource (HR) professionals can use data analytics to inform HR decisions. Includes descriptive, predictive, and prescriptive analytics. Concepts are applied using software tools such as Qualtrics, SPSS, Excel, and Tableau.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

BUS3 153 - Management of Diversity

3 unit(s)

Cross-cultural differences in effective HR management; organizational culture, cross-cultural communication, opportunity structures, organizational change; legal compliance and planning models such as Equal Employment Opportunity and Affirmative Action; conflict resolution strategies; dealing with internal and external compliance agencies.

Prerequisite(s): BUS3 150 or instructor consent. Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

BUS3 154 - Workforce Planning, Staffing and Training

3 unit(s)

Examines basic concepts, strategies and current issues in recruitment, talent acquisition, selection and training. Involves use of computer tools to analyze impacts of legal compliance, diversity, technology, outsourcing, restructuring and downsizing on effective management of human resources.

Prerequisite(s): BUS 150 and COMM 100W or ENGL 100WB or LLD 100WB. Upper division standing.

Grading: Letter Graded

BUS3 155 - Performance Management and Development

3 unit(s)

Assessment and performance management of individuals, groups and organizations in a rapidly changing environment. Explores need for change management skills such as organizational development, career development and coaching to assess and improve the talent base of organizations. Project required.

Prerequisite(s): BUS 150, COMM 100W or ENGL 100WB or LLD 100WB.

Grading: Letter Graded

BUS3 155B - Special Topics in Human Resource Management

3 unit(s)

Analysis and application of the latest economic, technological, global, and workforce trends that impact on how HRM practices are designed. Examples include prevalence of economic pressures, information technology, globalization, changing workplace demographics, and pandemics. Drawing upon theory and concepts, builds students' skills to stay current with recent developments and increase their relevance in the job market.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB; BUS3 150; and, BUS3 157 or BUS3 158. Allowed Declared Major: Business Administration/Human Resource Management. Graduating Senior Status.

Grading: Letter Graded

BUS3 157 - Legal Issues in Human Resource Management

3 unit(s)

Legal aspects of the employment relationship, including employment at will; contract, privacy, public policy, and whistleblower exceptions; EEO and affirmative action; prohibitions against discrimination and harassment; arbitration, trade secrets and non-competition agreements; occupational safety/health;

compensation, benefit and family leave laws. Project required.

Prerequisite(s): BUS3 80, BUS3 150 and BUS100W or COMM 100W or ENGL 100WB or LLD 100WB. Upper division standing. Allowed Declared Major: Bus Admin/Human Resource Mgmt or Business Minor.
Grading: Letter Graded

Sustainability Related - SDG 8: Decent Work and Economic Growth

BUS3 158 - Compensation and Reward Systems

3 unit(s)

Theories and practices of compensation and benefits; strategies to establish and administer equitable pay structures; job analysis, and evaluation, salary surveys, pay and motivation, skill-based pay systems, long-term and short-term performance plans, merit increase, bonus, stock options, profit-sharing, executive compensation and computer tools in compensation.

Prerequisite(s): BUS4 91L and BUS3 150. Upper division standing.
Grading: Letter Graded

BUS3 159 - Senior Seminar in Human Resource Management

3 unit(s)

Extension and integration of student knowledge, skills and abilities in strategic HRM; critical analysis of current HRM issues; exploration of HR career options; analysis of existing organization to develop methods of improving HRM decision-making in a real-world setting.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB; BUS3 150; BUS3 154, BUS3 157 and BUS3 158. Allowed Declared Major: Bus Admin/Human Resource Mgmt. Graduating Senior Status.
Grading: Letter Graded

BUS3 160 - Fundamentals of Management and Organizational Behavior

3 unit(s)

Provides a foundation for major topics in management and organizational behavior by surveying theories and practices relating to managerial roles, organizational cultures, fundamental strategic issues, planning, team building, communication, motivation, leadership, decision-making, control, structure and change.

Prerequisite(s): Upper division standing.
Grading: Letter Graded

BUS3 161A - Applied Organizational Behavior

3 unit(s)

Focuses on high-level application, analysis, synthesis and evaluation of group dynamics, interpersonal communication, motivation, leadership, perception and attitudes, individual power and politics, conflict and stress management. In-depth emphasis on key theories plus interpersonal managerial skills.

Prerequisite(s): BUS3 160, COMM 100W or ENGL 100WB or LLD 100WB.
Grading: Letter Graded

BUS3 161B - Organization Theory

3 unit(s)

Managing organization-wide structural and cultural changes leading to designs that enhance organizational effectiveness. Change issues of managing growth, resistance, intervention phases, crisis management, intergroup conflict/power are combined with design issues of balancing innovation and predictability, decentralization and centralization.

Prerequisite(s): BUS3 160, COMM 100W or ENGL 100WB or LLD 100WB. Upper division standing.

Grading: Letter Graded

BUS3 165 - Analysis and Design of Teams

3 unit(s)

Team formation, team structures, team communication, team dynamics, team performance, and team management challenges prevalent in organizations. Study of team types from a broad selection of business functions and industry contexts.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

BUS3 166 - Business, Government, & Society

3 unit(s)

Analysis of the American business system in terms of socio-economic and political constraints imposed upon business organizations by external, physical, legal, political, social and economic environments. Special reference to ethical issues in business, corporate social responsibility, profit maximization and countervailing powers in a pluralistic society.

Prerequisite(s): COMM 100W or ENGL 100WB or LLD 100WB. Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

BUS3 169A - Honors Seminar

3 unit(s)

This course will introduce some of the seminal theories in management and related fields. The seminar will provide a variety of views on organizations, organizational life and the way organizations function. The course will be cross-disciplinary, drawing on readings about organizations from a variety of sources and disciplines. Students will be required to apply theoretical concepts to their own work, field study, or internship experiences.

Prerequisite(s): BUS3 160 or BUS3 161B.

Grading: Letter Graded

BUS3 169B - Honors Practicum

3 unit(s)

Second semester of a two-semester honors program sequence. Student teams collaborate on a project sponsored by a company or other organization, under the supervision of the sponsor and the instructor. Teams present their final report to the sponsor.

Prerequisite(s): Completion of BUS3 160 and acceptance into the Honors Program. Students are encouraged to take BUS3 169A beforehand, though BUS3 169A and BUS3 169B can be taken out of sequence with instructor permission.

Grading: Letter Graded

BUS3 180D - Individual Studies Organizational Mgmt

1-6 unit(s)

Prerequisite(s): Not available to Open University Students.

Grading: Credit/No Credit.

BUS3 184N - Business Network Experience

3 unit(s)

Further students' understanding of how Silicon Valley emerged as an innovation ecosystem, how the business of technology has evolved, and how to lead innovation as a professional in Silicon Valley. Supports students' advancement into professional roles with focus on advanced soft-skills, communication skills, career planning, and leadership development. Includes roundtable discussions, career coaching, presentation feedback, soft-skills workshops, speaker events and company visits.

Prerequisite(s): BUS3 160; BUS3 150.

Corequisite(s): BUS3 189.

Grading: Letter Graded.

BUS3 186 - Professional and Business Ethics

3 unit(s)

Interdisciplinary study of types of ethical problems which arise within the contexts of business occupations and professions. Major ethical theories, critique of economic and criminal justice. Focus is on issues of justice and equality in the U.S. Case studies.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with PHIL 186. Philosophy is responsible for scheduling.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

BUS3 189 - Strategic Management

3 unit(s)

Integrative capstone seminar analyzing interrelationships of managerial decisions/actions within and between the firm and its environment. Applies multi-disciplinary techniques to diagnose and recommend actions appropriate to specific company situations, using case method.

Prerequisite(s): Restricted to students who completed the Jack Holland Student Success Center graduation application process. Any 100W.

Grading: Letter Graded

BUS3 192 - International Program Studies

1-14 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Business - Marketing & Business Analytics

BUS2 90 - Business Statistics

3 unit(s)

In terms of theory and application: collection and presentation of data; measures of central values and spread; probability as a measure of uncertainty; sampling and sampling distribution of the sample mean; confidence intervals; hypothesis testing; regression and correlation.

Prerequisite(s): MATH 70 or MATH 70X.

Grading: Letter Graded

BUS2 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

BUS2 130 - Introduction to Marketing

3 unit(s)

Analysis of marketing opportunities; planning of marketing programs with emphasis on product, price, promotion and distribution; control of the marketing effort; social and ethical responsibilities of marketing. Recommended: COMM 100W or ENGL 100WB or LLD 100WB.

Prerequisite(s): Upper division standing

Grading: Letter Graded

BUS2 131A - Business to Business Marketing

3 unit(s)

Marketing of goods, services and ideas to businesses. Examines distribution, pricing, promotion, marketing

research and planning. Emphasizes strategy development and the decision-making processes of customers.

Prerequisite(s): BUS2 130. Upper division standing.

Grading: Letter Graded

BUS2 131B - Retail Marketing Management

3 unit(s)

Special issues faced and approaches taken in retailing. Topics include store location, merchandise selection and display, financial management, promotion, store layout and image.

Prerequisite(s): BUS2 130. Upper division standing.

Grading: Letter Graded

Note(s): Offered only occasionally.

BUS2 131C - Marketing of High Technology

3 unit(s)

Course is for students who have exposure to Marketing and who want to apply marketing concepts and methods in a high technology situation. A hands-on course as much as possible. Toward the end students will pursue individual group projects and several in-class exercises.

Prerequisite(s): BUS2 130

Grading: Letter graded.

BUS2 131D - Marketing in New Ventures

3 unit(s)

Examines and explores the roles of marketing in the new venture. Focuses on learning conceptual framework for understanding customers, designing appropriate marketing activities, making marketing decisions and addressing marketing problems in building a new venture. Students analyze cases and undertake projects.

Prerequisite(s): BUS2 130.

Grading: Letter Graded

BUS2 132B - Supply Chain Analytics

3 unit(s)

Analysis of the process of planning, implementing and controlling the efficient, effective flow and storage of goods, services, and related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements.

Prerequisite(s): BUS2 130 and BUS2 190. Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

BUS2 133A - International Marketing

3 unit(s)

Impact of the international business environment on the development of marketing strategy and marketing mix, with emphasis on development of a global perspective and cultural sensitivity. Also covers international trade, importing and exporting.

Prerequisite(s): BUS2 130. Upper division standing.

Grading: Letter Graded

BUS2 133B - Relationship Marketing: Pacific Rim

3 unit(s)

Why not use PacRim marketing methods in PacRim markets? Americans tend to be short-term, sales-oriented. Asians tend to be relationship oriented. Why not master both marketing methods? Focus: Launching a "start-up". Topics: PacRim forms of product-launch, sales presentation, negotiation, promotion, PacRim risks.

Prerequisite(s): BUS2 130.

Grading: Letter Graded

Cross-listed with ASIA 133B. Marketing is responsible for scheduling.

BUS2 133C - International Marketing: Developing Nations

3 unit(s)

Why not use Third World marketing methods in Third World markets? Russian, African and Islamic regions pose special risks for U.S. marketers. Focus: Third World ways to cope. Topics: Bribery, corruption, terrorism, smuggling, as well as Anti-Americanism, Market-Communism, Fundamentalist Islam.

Prerequisite(s): BUS 130. Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

BUS2 133E - Marketing to Eastern/Western Europe

3 unit(s)

To market in Europe, one must learn how Europeans market. Developed and evolved over centuries, European business methods are complex, subtle, and largely unknown to America. This course provides insights into these methods.

Prerequisite(s): BUS2 130

Grading: Letter Graded

BUS2 134A - Consumer Behavior

3 unit(s)

An examination of psychological, sociological, and other factors that affect customer behavior. These factors are examined in an effort to help businesses and other organizations to accurately assess and effectively satisfy customer needs.

Prerequisite(s): BUS2 130 and any 100W, or SJSU Online Program student and any 100W. Upper division

standing

Grading: Letter Graded

BUS2 134B - Integrated Marketing Communications

3 unit(s)

Focus is on design and delivery of marketing messages to targeted audiences. Analysis and planning seeks integration of messages delivered through advertising, sales promotion, personal selling, public relations, and other communication methods.

Prerequisite(s): BUS2 130 and Any 100w. Upper division standing.

Grading: Letter Graded

Sustainability Related

BUS2 134C - Social Media Marketing

3 unit(s)

This course seeks to provide students with insights into the latest technologies and medial platforms available to marketers and used in marketing practice. Students will learn about major theories, best practices, new technologies and new media platforms and apply them to real-life examples.

Prerequisite(s): BUS2 130

Grading: Letter Graded

BUS2 135 - Sales Management

3 unit(s)

Teaches skills in personal selling with guidelines for designing and managing the sales function. Topics include advanced sales techniques, high impact questioning methodologies, closing techniques and managing objections, account and territory planning and management, resource planning and management, and sales compensation programs.

Prerequisite(s): BUS2 130. Upper division standing.

Grading: Letter Graded

BUS2 135B - Services Marketing

3 unit(s)

Exploration of the unique marketing needs and challenges faced by service organizations and goods-oriented firms that use service as a competitive strategy in an increasingly challenging global environment.

Prerequisite(s): BUS2 130 and upper division standing.

Grading: Letter Graded

BUS2 135C - Entertainment Marketing

3 unit(s)

Introduction to film marketing, as well as an overview of related issues in music, fashion, and other fields. Explores the players who work in all aspects of entertainment marketing. Covers the basic elements of various transactions: copyright exploitation, distribution, financing and money flow.

Prerequisite(s): BUS2 130

Grading: Letter graded.

BUS2 135D - Sports Marketing

3 unit(s)

Survey of the essentials of sport marketing. Includes planning, promotions, operations and market analysis with an emphasis on intercollegiate athletics and professional sports. Examines the central role of the customer experience and service quality.

Prerequisite(s): BUS2 130

Grading: Letter graded.

BUS2 136 - Product Development

3 unit(s)

Integrative analysis of product development related to life-cycle management. Emphasis is on new product/service planning.

Prerequisite(s): BUS2 130. Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

BUS2 137A - Soft Skills

3 unit(s)

An examination of the soft skills (self-management skills and people skills) employers feel recent college graduates are lacking. Some of these skills include, but aren't limited to, listening skills, likability, flexibility, giving/receiving criticism, work ethic, dining etiquette, cultural sensitivity, etc.

Prerequisite(s): BUS2 130

Grading: Letter Graded

BUS2 137D - Special Topics in Business Analytics

3 unit(s)

Special topics in business analytics. The instructor may choose to address one special topic, theme, or several related topics. Requires one or more projects, at instructor's discretion.

Prerequisite(s): BUS2 90.

Grading: Letter Graded.

BUS2 137H - Marketing and Business Analytics Honors Practicum

3 unit(s)

Students work on sponsored projects in the areas of Marketing and Business Analytics. Students are assigned to a host company, work with the host company and faculty advisor on a topic in Marketing and Business Analytics, and present a project report.

May be repeated for credit for up to 6 units.

Prerequisite(s): BUS2 130 or BUS2 190 or Instructor consent.

Grading: Letter Graded

BUS2 137S - Special Topics in Marketing

3 unit(s)

Special topics in the management of marketing or in the marketing environment. The instructor may choose to address one special topic, theme, or several related topics. Requires one or more projects, at instructor's discretion.

Prerequisite(s): BUS2 130.

Grading: Letter Graded

BUS2 138 - Marketing Research

3 unit(s)

Fundamentals of empirical study in marketing, including hypotheses formulation, testing, and the basis of inference. Questionnaire and experimental design, attitude measurement, sampling and data collection, and analysis are emphasized along with applications to marketing decision-making.

Prerequisite(s): BUS2 90, BUS2 130, any 100W, and upper division standing.

Grading: Letter Graded

BUS2 139 - Marketing Management

3 unit(s)

Marketing management is a capstone course whose purpose is to provide the student with the opportunity to demonstrate and integrate the capabilities acquired from the prerequisite courses.

Prerequisite(s): BUS2 130, BUS2 134A, BUS2 134B, BUS2 138, COMM 100W or ENGL 100WB or LLD 100WB and Senior standing. BUS2 190 is strongly recommended.

Grading: Letter Graded

BUS2 180F - Individual Study Marketing

1-4 unit(s)

Prerequisite(s): Not available to Open University Students.

Grading: Credit/No Credit.

BUS2 190 - Fundamentals of Business Analytics

3 unit(s)

Quantitative models and computer software used in business decision-making. Studies of network and transportation models, linear programming, CPM/PERT project analysis, decision analysis, simulation, and other techniques used in management science applications.

Prerequisite(s): BUS2 90, and MATH 70 or MATH 70X or equivalent. Upper Division Standing. Not available to Open University Students.

Grading: Letter Graded

BUS2 192A - International Program Studies

1-14 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

BUS2 193 - Data Mining

3 unit(s)

Data Mining is used to discover patterns and relationships in data. Emphasis is on large complex data sets such as those in very large databases or through web mining. Topics: data visualization, association rules, clustering, and various modern classification techniques.

Prerequisite(s): BUS2 90 or instructor consent.

Grading: Letter Graded

BUS2 194A - Statistical Analysis

3 unit(s)

This course develops fundamental knowledge and skills for applying statistics in business decision-making. Topics include hypothesis testing, simple and multiple regression, experimental design, time series analysis and non-parametric estimation.

Prerequisite(s): BUS2 90

Grading: Letter Graded

BUS2 194B - Prescriptive Analytics in Business

3 unit(s)

This course covers applications of linear, nonlinear, and discrete optimization as well as the modeling of stochastic processes, including inventory control models and waiting line models.

Prerequisite(s): BUS2 190

Grading: Letter Graded

BUS2 195A - Spreadsheet Modeling

3 unit(s)

Develop your analytical modeling skills and learn advanced features of Excel. Focus is on using Excel to model real-world decision-making problems. Covers Excel features including IF functions, lookup tables, date and text manipulation, sorting, filtering, graphing, and VBA.

Prerequisite(s): BUS2 190

Grading: Letter Graded

BUS2 195B - Data Visualization and Exploration

3 unit(s)

Introduction to basic database management concepts, methods, and technologies. Experience in writing queries using Structured Query Language (SQL). Creating effective visualizations for structured and unstructured data using Tableau and Power BI. The course targets students who are interested in using database management and visualizations to better understand information and make it more communicable to others.

Prerequisite(s): BUS2 90.

Grading: Letter Graded

BUS2 195C - Simulation Modeling and Analysis

3 unit(s)

Building and using simulation models in business systems using both Excel and high-level simulation software package. Topics include discrete-event simulation, Monte Carlo simulation, simulation input data collection and analysis, statistical analysis of simulation output.

Prerequisite(s): BUS2 190.

Grading: Letter Graded

BUS2 195D - Analytic Strategy

3 unit(s)

This course provides hands-on experience in transforming large amounts of diverse data into business decisions. This is accomplished via an engaging, complex simulation in which participants develop data-driven tactical and strategic decisions.

Prerequisite(s): BUS2 194A and BUS2 194B

Grading: Letter Graded

Chemical Engineering

CHE 109 - Heat Transfer in Electronics

3 unit(s)

Introduction to thermodynamics and heat transfer, including conduction, convection and radiation. An emphasis on applications for electronics; including heat transfer in computer components, heat sinks, liquid and air cooling and heat pipes.

Prerequisite(s): EE 98, PHYS 51 and one of the following courses: MATH 39 or MATH 33LA . Allowed Declared Majors: Computer Engineering, Electrical Engineering, Engineering, Industrial and Systems Engineering.

Grading: Letter Graded

Cross-listed with ME 109. Chemical Engineering is responsible for scheduling.

CHE 110A - Mathematical Methods in Chemical Engineering

2 unit(s)

Mathematical methods applied to engineering problems using chemical engineering examples. The development of mathematical models to describe chemical process dynamic behavior. Mathematical methods focus on linear algebra, ordinary differential equations and partial differential equations with specific applications to chemical engineering.

Lecture 1 hour/lab 3 hours.

Prerequisite(s): MATH 32 or MATH 32H or MATH 32X, and PHYS 51 with grade C or better.

Grading: Letter Graded

CHE 110B - Computational Methods in Chemical Engineering

2 unit(s)

Computational methods applied to engineering problems using chemical engineering examples. The solution of mathematical models to describe chemical process dynamic behavior. Computational tools focus on MATLAB, CAD design and simulation packages with specific applications to chemical engineering.

Lecture 1 hour/lab 3 hours.

Prerequisite(s): CHE 110A with a grade of "C-" or better or instructor consent

Pre/Corequisite(s): CHE 115 with a grade of "C-" or better.

Grading: Letter Graded

CHE 115 - Industrial Chemical Calculations

3 unit(s)

Methods of formulation and solution of material and energy balances as applied to chemical processes.

Prerequisite(s): PHYS 51 (with a grade of "C-" or better).

Pre/Corequisite(s): MATH 33A (prerequisite) or CHE 110A (corequisite).

Grading: Letter Graded.

CHE 131 - Air Pollution Meteorology

3 unit(s)

Quantitative description of contaminants in the atmosphere: sources, dispersion and sinks; their effects on atmospheric energy balance and condensation.

Prerequisite(s): METR 121B or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 131 / METR 131. Meteorology and Climate Science is responsible for scheduling.

Sustainability Focused - SDG 3: Good Health and Well-Being

CHE 133 - Sustainable Engineering

3 unit(s)

Concepts of sustainable system design in engineering with an emphasis on measuring sustainability, designing for sustainability, and implementing sustainability. Applications include a chemical focus that incorporates process engineering fundamentals and green chemistry principles.

Prerequisite(s): CHE 110A or MATH 33LA with a grade of C- or better, instructor consent.

Grading: Letter Graded

CHE 137 - Pollution Control Engineering

3 unit(s)

Sources and effects of air pollution. Design aspects of mitigation, abatement, and strategies for control of air pollution and subsequent water and soil pollution.

Prerequisite(s): CHE 110A or MATH 33LA with a grade of C- or better, instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

CHE 142 - Principles of Thermal Analysis

1 unit(s)

Principles and practice of thermal analysis. Basic theory and skills development of thermogravimetry and calorimetry. Analysis of devolatilization, heating, and cooling of materials/samples.

Lab 3 hours.

Prerequisite(s): Senior standing or instructor consent.

Grading: Letter Graded.

CHE 151 - Process Engineering Thermodynamics

4 unit(s)

Analysis of the ideal and real behavior of gases, liquids and solids from a macroscopic viewpoint; 1st and 2nd Law; phase rule, volumetric properties of fluids; heat effects; solution theory and applications; vapor-liquid and solid-solid equilibrium; chemical reaction equilibria.

Misc/Lab: Lecture 3 hours/calculation period 3 hours.

Prerequisite(s): CHE 115 and ENGR 10

Grading: Letter Graded

CHE 158 - Kinetics and Reactor Design

3 unit(s)

Analysis of unsteady chemical processes with emphasis on kinetics of reaction and application of fundamental principles to the design and operation of commercial reactors.

Misc/Lab: Lecture 2 hours/calculation period 3 hours.

Prerequisite(s): CHE 115, CHE 151, CHE 160A, CHE 162 and CHE 190 (with an average of "C" or better in the five courses); ENGR 100W.

Grading: Letter Graded

CHE 160A - Unit Operations I

4 unit(s)

Materials transportation, fluid metering, mixing, sedimentation, filtration, heat exchange and evaporation; types of equipment used and numerous practical applications. Introduction to transport theory.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): CHE 110B, CHE 115, CHE 190 (all with a grade of "C-" or better).

Grading: Letter Graded.

CHE 160B - Unit Operations II

4 unit(s)

Continuation of CHE 160A. Mass transfer operations, diffusion, absorption, extraction, distillation, humidification, membrane separations, drying and crystallization. Field trips to process industries. Integrate global and social issues in engineering.

Lecture 3 hours/calculation period 3 hours.

Prerequisite(s): CHE 115, CHE 151, CHE 160A, CHE 162, and CHE 190 (with an average of "C" or better in the five courses); ENGR 100W. Allowed Declared Major: Chemical Engineering.

Grading: Letter Graded

CHE 161 - Process Safety and Engineering Ethics

1 unit(s)

Topics include principles of chemical process safety, risk assessment, analysis of ethics issues, and the application of the engineering ethical code using case studies. Integrate global and social issues in engineering.

Misc/Lab: Lecture 1 hour.

Prerequisite(s): CHEM 1B.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

CHE 161L - Undergraduate Chemical Engineering Laboratory

2 unit(s)

Quantitative study of chemical engineering processes, with emphasis on fluid flow and heat transfer operations. Written and oral reports required.

Lecture 1 hour/Lab 3 hours.

Prerequisite(s): CHE 115, CHE 162, and CHE 190 (with an average of C or better in the three courses); and ENGR 100W.

Corequisite(s): CHE 151 and CHE 160A.

Grading: Letter Graded

CHE 162 - Engineering Statistics and Analysis

2 unit(s)

Topics will include error analysis, probability, statistics including hypothesis testing, confidence limits and control variables, design of experiments and statistical process control as they are utilized in the chemical, materials and process engineering industries.

Lecture 1 hours/Lab 3 hours.

Prerequisite(s): MATH 33A

Grading: Letter Graded

Cross-listed with ISE 162. Chemical Engineering is responsible for scheduling.

CHE 163L - Undergraduate Chemical Engineering Laboratory II

2 unit(s)

Chemical engineering principles with an emphasis on traditional and novel applications in focuses such as environmental engineering and biotechnology. Written and oral reports are required.

Lecture 1 hour/Lab 3 hours.

Prerequisite(s): ENGR 100W, CHE 161L , CHE 190, and CHE 160A.

Corequisite(s): CHE 158 and CHE 160B.

Grading: Letter Graded.

CHE 165A - Plant Design I

2 unit(s)

Introduction to the technical and economic evaluation of a chemical processing plant design. Introduction to project design and effective team management. First of a two-course sequence.

Lecture 1 hour/Lab 3 hours.

Corequisite(s): CHE 158 and CHE 160B; instructor consent.

Grading: Letter Graded.

CHE 165B - Plant Design II

2 unit(s)

Continuation of the technical and economic evaluation of a chemical processing plant, including most aspects of a typical industrial design. Major plant design project report required. Second of two-course sequence.

1 hour lecture/ 3 hours lab.

Prerequisite(s): CHE 165A; instructor consent.

Grading: Letter Graded

CHE 172 - Biofuels Process Engineering

3 unit(s)

Focus on the practical applications of engineering principles and practices used to produce the three major

biofuels products commonly available today: ethanol, biodiesel and methane. Differences between entrepreneurial efforts and more traditional processes will be explored.

Prerequisite(s): MATH 32 or MATH 32H or MATH 32X, and junior standing.

Grading: Letter Graded

Sustainability Focused - SDG 7: Affordable and Clean Energy

CHE 174 - Hazardous Materials

3 unit(s)

Review of current methods and procedures for management of hazardous materials and hazardous wastes; analysis of contaminated systems and remedial actions.

Prerequisite(s): PHYS 51 and CHEM 1A, or instructor consent.

Grading: Letter Graded

Cross-listed with GEOL 174. Chemical Engineering is responsible for scheduling.

Sustainability Focused - SDG 12: Responsible Consumption and Production

CHE 176 - Energy Storage Systems

3 unit(s)

Principles and technology of energy conversion related to energy storage systems such as batteries, fuel cells, solar cells, and super capacitors. Relationships among electricity, chemistry, heat and mass transfer in energy storage systems. Energy storage system design and applications are emphasized.

Prerequisite(s): Junior Standing. Engineering and Science majors only

Grading: Letter Graded

Sustainability Focused - SDG 7: Affordable and Clean Energy

CHE 178 - Smart Sensors and Biosensors

3 unit(s)

Theoretical and experimental understanding of design, operation, and performance of sensors and biosensors and integration into wired and wireless monitoring systems. Types include magnetic, optical, bio, chemical, radiation, electrical, and mechanical. In-class activities explore sensor design parameters such as sensitivity, dynamic range, specificity, stability, repeatability, and compatibility and the integration of sensors with data acquisition to create a smart system.

Prerequisite(s): Completion of Junior Core with a C- or better, ENGR 100W, or Instructor consent.

Grading: Letter Graded.

CHE 180 - Individual Studies

1-3 unit(s)

Individual work on special topics by arrangement.

Prerequisite(s): Not available to Open University Students

Grading: Credit/No Credit

CHE 180R - Undergraduate Research and Projects

1-3 unit(s)

Individual work on special topics by arrangement. This section is for students working on formal, structured research or projects that are substantial enough to meet the requirements of the elective ChE lab requirement in each of the emphasis tracks.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

CHE 185 - Chemical Process Dynamics and Control

2 unit(s)

Dynamic behavior of representative chemical processes. Process control; dynamics of open-loop systems; techniques of closed-loop control.

Lecture 1 hour/lab 3 hours.

Prerequisite(s): CHE 160B.

Grading: Letter Graded

CHE 190 - Introduction to Transport Phenomena

3 unit(s)

Introduction to thermodynamics, fluid mechanics and heat transfer. Basic thermodynamics with first and second laws. Laminar and turbulent flow of incompressible fluids. Boundary layer analysis. Convection and steady state and transient conduction.

Prerequisite(s): CHE 110A or MATH 33LA with a grade of "C-" or better, PHYS 51 with a grade of "C" or better, CE 95 or CE 99. Or instructor consent.

Grading: Letter Graded

CHE 191 - Bioseparations

3 unit(s)

Downstream bioprocesses including design, troubleshooting, scale-up, economics and validation with a focus on biopharmaceutical products.

Prerequisite(s): CHE 192 or Biochemistry or relevant industrial experience.

Grading: Letter Graded

CHE 192 - Introduction to Biochemical Engineering

3 unit(s)

Enzyme kinetics and enzyme reactors, enzyme isolation and purification, cellular regulation and recombinant DNA technology, microbial kinetics and design/operation of fermenters.

Prerequisite(s): CHEM 112A, or both CHEM 130A and CHEM 130B, or CHEM 135 or CHE 158.

Grading: Letter Graded

CHE 194 - Biochemical Engineering Lab

3 unit(s)

Principles, concepts and mechanisms of growth and purification of products from biological systems investigated, with emphasis on scale-up procedures. Recombinant DNA techniques and bioinformatics included.

Lecture 2 hours/lab 3 hours.

Pre/Corequisite(s): CHEM 130A or CHEM 135 or CHE 192.

Grading: Letter Graded.

CHE 199 - Special Topics in Chemical and Materials Engineering

3 unit(s)

Special Topics in Chemical and Materials Engineering. Content varies from semester to semester. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Cross-listed with MATE 199. Chemical Engineering is responsible for scheduling.

CHE 200 - Research Methods

3 unit(s)

Introduction to key statistical, experimental, and computational tools for independent project and research investigation in chemical and materials engineering. Literature review, experiments, data analysis, and individual written reports.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Conditional graduate standing in Chemical or Materials Engineering.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CHE 207 - Mass Transfer

3 unit(s)

An advanced study of the principles of mass transfer in the diffusional operations of distillation, absorption, extraction, drying and humidification.

Prerequisite(s): CHE 160B.

Grading: Letter Graded

CHE 211 - Advanced Chemical Engineering Thermodynamics

3 unit(s)

Quantitative development of fundamental laws of thermodynamics and their application to chemical processes. Equilibria and thermal effects in homogeneous and heterogeneous systems. Studies of behavior of complex mixtures and high pressure phenomena.

Prerequisite(s): CHE 151 and MATH 33A.

Grading: Letter Graded

CHE 218 - Reaction Kinetics

3 unit(s)

Theoretical background of simple homogeneous reactions collision theory and absolute reaction rate theory; mechanisms of complex homogeneous reactions. Mechanisms of reactions catalyzed by solids; diffusion in solid catalyst. Reactor design.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): MATH 33A, CHE 151, and CHE 158.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CHE 219 - Transport Processes

3 unit(s)

Derivation of general differential equations for transport of heat, mass and momentum; kinetic theory of fluids and its application to transport phenomena based on molecular motion; methods for estimating transport coefficients in fluids.

Prerequisite(s): CHE 160B.

Grading: Letter Graded

CHE 280 - Graduate Research

2 unit(s)

Supervised individual research or directed studies for the student with adequate preparation. Students must have a research advisor and topic.

Course may be repeated for credit for up to 10 units.

Grading: Credit/No Credit.

Note(s): Only one section of CHE 280/280I/283 can be taken per semester. Not available to Open University students.

CHE 280I - Graduate Research Internship

2 unit(s)

Supervised individual research or directed studies for the student with adequate preparation. Students must have a research advisor and topic.

Course may be repeated 5 times for credit for up to 10 units.

Grading: Credit/No Credit.

Note(s): This course is for students completing their research work at an off-campus location. Only one section of CHE 280/280I/283 can be taken per semester. Not available to Open University students.

CHE 281 - MS Thesis/Project Preparation Seminar

3 unit(s)

Development of project or thesis proposal.

Lecture 2 hours/ Lab 3 hours.

Prerequisite(s): Classified standing, completion of minimum 9 units towards MS degree, candidacy form submitted, satisfactory completion of university graduate writing requirement.

Grading: Credit/No Credit

Cross-listed with MATE 281. Materials Engineering is responsible for scheduling.

CHE 282 - Applied Graduate Research

3 unit(s)

Supervised master's research project directed by an SJSU faculty member research advisor. Students must be working on their master's experimental research at least 12-15 hours per week, and submit SJSU research advisor approved confirmation of research hours completed each week.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): CHE 200.

Grading: Credit/No Credit.

Note(s): Not available to Open University students. Only one section of CHE 280/280I/282 per semester.

CHE 283C - Graduate Curricular Practical Training

1-3 unit(s)

Curricular Practical Training (CPT) for graduate students. A report is required at the end of the semester.

Course is repeatable for up to 6 units.

Prerequisite(s): Graduate standing, in good standing, and completed at least one semester of master's level work at SJSU.

Grading: Credit/No Credit.

Note(s): Not available to Open University students. This course is for students completing their Curricular Practical Training (CPT) at an off-campus location.

CHE 291 - Industrial Bioseparations

3 unit(s)

Industrial considerations for downstream bioseparation processes including design, troubleshooting, scale-up, economics and validation with a focus on pharmaceutical products.

Prerequisite(s): CHE 192 or biochemistry or relevant industrial experience.

Grading: Letter Graded

CHE 293 - Applied Bioinformatics

3 unit(s)

Bioinformatics theory and applications including sequence search, proteomics, molecular modeling, and combinatorial chemistry. Students will work in teams and be guided in independent inquiry to solve practical bioinformatics problems.

Prerequisite(s): Senior or graduate standing in engineering or science.

Grading: Letter Graded

Cross-listed with CHEM 293. Chemical Engineering is responsible for scheduling.

CHE 298 - MS Research/Project

1-2 unit(s)

Master's project work in Chemical Engineering.

Repeatable up to 30 units.

Prerequisite(s): Advancement to candidacy. CHE 281 (Co-requisite with research advisor approval). Not available to Open University Students

Grading: Credit/No Credit/RP.

CHE 298I - MS Research/Project Internship

1-3 unit(s)

Master's project work in Chemical Engineering. This section is for students completing their Master's project work at an off campus location.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Advancement to candidacy. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

CHE 299 - Master's Thesis

1-3 unit(s)

Master's thesis work in Chemical Engineering.

Prerequisite(s): Advancement to candidacy. CHE 281. CHE 281 may be taken concurrently with research advisor approval. Not available to Open University Students.

Grading: Credit/No Credit/RP.

CHE 299I - Master's Thesis Internship

1-3 unit(s)

Master's thesis work in Chemical Engineering. This section is for students completing their Master's thesis work at an off campus location.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): CHE 281, CHE 298. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

Note(s): CHE 298 may be taken co-currently with instructor approval.

CHE 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on dissertation, thesis, or project or in preparation for comprehensive exams beyond the minimum required units for cases in which final deliverables are still in progress and all other degree requirements except the culminating experience have been fulfilled.

Prerequisite(s): Outstanding RP grade in a previous semester in CHE 298 or 299

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit

Chemistry

CHEM 1A - General Chemistry

5 unit(s)

Topics including stoichiometry, reactions, atomic structure, periodicity, bonding, states of matter, energy changes, solutions using organic and inorganic examples. Lab program complements lecture.

Misc/Lab: Lecture 3 hours/lecture 1 hour/lab 3 hours.

Satisfies B1 + B3: Physical + Lab Science.

Prerequisite(s): Proficiency in high school chemistry or CHEM 10 (with a grade of "C" or better; "C-" not accepted) or instructor consent; proficiency in high school algebra and eligibility for MATH 19; Writing Enrollment Group W-I or W-II, or ENGL 1AF with a grade of CR, or ENGL 1A with a grade of C- or better.

Grading: Letter Graded

CHEM 1B - General Chemistry

5 unit(s)

Topics including stoichiometry, colligative properties, kinetics, equilibria, thermodynamics and electrochemistry. Lab program complements lecture.

Lecture 3 hours, lab/activity 5.5 hours.

Satisfies B1: Physical Science + B3: Laboratory.

Prerequisite(s): CHEM 1A (with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 2 - Academic Excellence Workshop

1-2 unit(s)

Cooperative learning activity to accompany selected College of Science courses and sections.

Activity 4 hours.

Corequisite(s): Enrollment in course and section accompanying workshop.

Grading: Credit/No Credit

Note(s): No credit toward requirements for any science major or minor. May be used for university electives.

CHEM 8 - Organic Chemistry

3 unit(s)

Introduction to the chemistry of carbon compounds for allied health majors and others requiring only 3 units of organic chemistry lecture.

Prerequisite(s): CHEM 1B (with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): CHEM 8 is not a satisfactory prerequisite for CHEM 112B. No credit toward Chemistry major or minor.

CHEM 9 - Organic Chemistry Lab

1 unit(s)

Organic chemistry laboratory for allied health majors and others requiring only 1 unit of organic chemistry lab.

Lab 3 hours.

Pre/Corequisite(s): CHEM 8.

Grading: Letter Graded

Note(s): No credit toward Chemistry major or minor.

CHEM 10 - Chemical Calculations and Concepts

3 unit(s)

Fundamental concepts in chemistry and problems in chemical symbolism and calculations. For students wishing to continue in chemistry, but lacking prerequisites for CHEM 1A.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): One year high school algebra.

Grading: Letter Graded

Note(s): No credit towards chemistry major or minor.

CHEM 30A - Introductory Chemistry

3 unit(s)

The physical world as seen by a chemist; the ways this world affects humans, other animals and plants used as illustrations of fundamental general chemistry.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Satisfies B1 + B3: Physical + Lab Science.

Grading: Letter Graded

Note(s): No credit toward Chemistry major or minor.

CHEM 30B - Introductory Chemistry

3 unit(s)

Organic compounds produced both in nature and artificially and the reactions they undergo, particularly in the human.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): CHEM 30A or CHEM 1A (with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): No credit toward Chemistry major or minor.

CHEM 55 - Quantitative Analysis

2 unit(s)

Introduction to theories and techniques of chemical analysis.

Prerequisite(s): CHEM 1B (with a grade of "C" or better; "C-" not accepted)

Grading: Letter Graded

CHEM 55L - Quantitative Analysis Laboratory

2 unit(s)

Introduction to chemical analysis techniques.

Lab 6 hours.

Pre/Corequisite(s): CHEM 55.

Grading: Letter Graded

CHEM 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CHEM 100W - Writing Workshop: Chemical Communications

3 unit(s)

Improvement of skills in scientific writing and speaking.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): CHEM 55 or CHEM 112A (with grades of "C" or better; "C-" not accepted). A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Allowed Declared Majors: Chemistry, Biochemistry. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

CHEM 105 - Computational Data Analysis in Chemistry

3 unit(s)

Computational methods for analyzing and storing chemical data sourced from both experiments and molecular simulations. Emphasis on the use of Excel and Python; no previous coding experience needed.

Lecture 2 hours/activity 2 hours.

Prerequisite(s): CHEM 55 and MATH 30 or MATH 30X (with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded.

Note(s): Offered online.

CHEM 112A - Organic Chemistry

3 unit(s)

Chemistry of the carbon compounds, both aliphatic and aromatic, emphasizing underlying concepts.

Prerequisite(s): CHEM 1B (with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 112B - Organic Chemistry

3 unit(s)

Continuation of CHEM 112A.

Prerequisite(s): CHEM 112A (with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 113A - Organic Chemistry Lab

2 unit(s)

Fundamental techniques for the isolation, characterization and synthesis of organic compounds.

Misc/Lab: Lab 6 hours.

Prerequisite(s): CHEM 112A (with a grade of "C" or better; "C-" not accepted). Chemistry, Biology, Forensic Science-Chemistry, Forensic Science-Biology, and Chemical Engineering majors only, all others by department consent.

Grading: Letter Graded.

CHEM 113B - Organic Chemistry Lab

3 unit(s)

Continuation of CHEM 113A including more advanced work.

Lecture 1 hour/lab 6 hours.

Prerequisite(s): CHEM 113A (with a grade of "C" or better; "C-" not accepted). Chemistry majors only or instructor consent.

Pre/Corequisite(s): CHEM 112B.

Grading: Letter Graded

CHEM 114 - Advanced Organic Chemistry Lab

3 unit(s)

A capstone course on special topics in laboratory experiments utilizing modern chemical, physical and spectrometric methods. A grade of "C" or better is required for majors.

Lecture 1 hour/lab 6 hours.

Prerequisite(s): CHEM 55, CHEM 100W, CHEM 112B and CHEM 113B (with grades of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 118 - Special Topics in Organic Chemistry

1 unit(s)

Introduction to a wide range of subjects typically missing from the traditional organic chemistry sequence (CHEM 112A and CHEM 112B, CHEM 113A, and CHEM 113B). Consult schedule of classes for current offering(s).

May be repeated for credit for up to 2 units.

Prerequisite(s): CHEM 112B (with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 120S - Chemical Safety Seminar

1 unit(s)

Safety protocol appropriate to working with hazardous chemicals. Physical nature of hazards, biological effects, permissible exposures, safety precaution techniques. OSHA requirements.

Prerequisite(s): College level chemistry course. Upper division standing.

Grading: Credit/No Credit

CHEM 121S - Radiation Safety

1-2 unit(s)

Health hazards involved in working with radioactive substances. Physical nature of hazards, biological effects, standards of permissible exposures, safety precautions and protection techniques. Two units meet State of California recommendations.

Prerequisite(s): Lower division calculus, chemistry and physics.

Grading: Letter Graded

Cross-listed with NUCS 121S / PHYS 121S. Chemistry is responsible for scheduling.

CHEM 126 - Introduction to Nuclear Science

3 unit(s)

Properties of the atomic nucleus. Applications of nuclear science in biology, chemistry, engineering, geology and physics.

Prerequisite(s): Lower division calculus, chemistry and physics.

Grading: Letter Graded

Cross-listed with NUCS 126 / PHYS 126. Chemistry is responsible for scheduling.

CHEM 127 - Nuclear Science Lab

3 unit(s)

Basic techniques and procedures used in nuclear science. Nuclear decay, nuclear reactions, radiation detection and measurements, nuclear analytical methods, and tracer techniques.

Lecture 1 hour/lab 6 hours.

Prerequisite(s): NUCS 121S, CHEM 100W, and CHEM 126 (with grades of "C" or better; "C-" not accepted); or instructor consent.

Grading: ABC-/No Credit

Cross-listed with NUCS 127 / PHYS 127. Chemistry is responsible for scheduling.

CHEM 130A - Biochemistry

4 unit(s)

Chemistry of amino acids, carbohydrates, lipids, and nucleotides. Studies of protein structure and function, protein isolation, enzyme kinetics, and enzyme mechanisms.

Prerequisite(s): CHEM 112B (with grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): CHEM 130A and CHEM 135 cannot both be applied towards a Chemistry major or a Chemistry minor.

CHEM 130B - Biochemistry

4 unit(s)

Continuation of CHEM 130A. Concepts of bioenergetics; biochemical pathways of degradation and synthesis; metabolic regulation.

Prerequisite(s): CHEM 130A and BIOL 30 (with grades of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 130C - Biochemistry

3 unit(s)

Advanced biochemical topics selected from the fields of immunology, physiology, molecular and cell biology.

Prerequisite(s): CHEM 130A and BIOL 30 (with grades of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 131A - Biochemistry Lab

2 unit(s)

Fundamental qualitative and quantitative techniques and methodology in modern biochemistry.

Lab 6 hours.

Prerequisite(s): CHEM 55 and CHEM 113A (with a grade of "C" or better; "C-" not accepted).

Pre/Corequisite(s): CHEM 130A.

Grading: Letter Graded

CHEM 131B - Biochemistry Lab II

3 unit(s)

Second course of a two semester biochemistry laboratory sequence, with laboratory work associated with intermediate qualitative and quantitative techniques in modern biochemistry. It serves as a capstone course on advanced isolation techniques and enzyme methodology that requires students to integrate principles, theories, and methods learned in previous courses through a research project.

Lecture 1 hour/lab 6 hours.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): CHEM 100W, CHEM 130A, and CHEM 131A (with grades of "C" or better; "C-" not accepted).

Pre/Corequisite(s): CHEM 130B or CHEM 130C.

Grading: Letter Graded

CHEM 132 - Introductory Biochemistry

4 unit(s)

Cellular and nutritional biochemistry for those who do not plan to continue in biochemistry, such as nutritional science and other science majors.

Prerequisite(s): CHEM 30B or CHEM 8 (with grades of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): No credit toward Chemistry major or minor.

CHEM 132L - Introductory Biochemistry Lab

1 unit(s)

Lab work associated with chemistry of foods and nutrition, cellular metabolism, biomacromolecules, vitamins, and the structure of carbohydrates, lipids, proteins, and nucleic acids.

Lab 3 hours.

Prerequisite(s): CHEM 30B or CHEM 8 (with a grade of "C" or better, "C-" not accepted).

Pre/Corequisite(s): CHEM 132.

Grading: Letter Graded

Note(s): No credit toward Chemistry major or minor.

CHEM 135 - General Biochemistry

4 unit(s)

Survey course on structure/function of biological molecules such as amino acids, proteins including enzymes, lipids/membranes, carbohydrates, and nucleic acids. Course topics include intermediary metabolism, regulation, and molecular biology.

Prerequisite(s): BIOL 30 (Biology majors only; with a grade of "C-" or better), CHEM 112B (with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded.

Note(s): CHEM 135 and CHEM 130A cannot both be applied toward a chemistry major or a chemistry minor.

CHEM 145 - Inorganic Chemistry

3 unit(s)

Development of unifying principles to understand the chemistry of the elements. An introduction to the chemistry, bonding theories, and applications of coordination compounds.

Prerequisite(s): CHEM 112B (with grade of "C" or better; "C-" not accepted).

Corequisite(s): CHEM 113A.

Grading: Letter Graded

CHEM 146 - Physical-Inorganic Techniques

3 unit(s)

Application of advanced instrumental and preparative techniques to the study of structure, reactivity, and spectroscopy of inorganic and organic substances including materials. This is a capstone course. A grade of "C" or better is required for majors.

Lecture 1 hour/lab 6 hours.

Prerequisite(s): CHEM 100W, CHEM 113A, and CHEM 145 (with grades of "C" or better; "C-" not accepted) or instructor consent.

Grading: Letter Graded

CHEM 155 - Instrumental Analysis

4 unit(s)

Principles and practices in the use of instrumental methods in chemical analysis. Basic physical chemistry necessary to understand the operation and limitations of the instruments.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): CHEM 55, CHEM 55L, and CHEM 100W or JS 100W or ENGR 100W (with grades of "C" or better; "C-" not accepted).

Grading: Letter Graded.

CHEM 159 - Advanced Analytical Chemistry

1-2 unit(s)

A lecture and problem course which considers advanced topics in chemical analysis. Consult schedule of classes for current offering(s).

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Note(s): A total of 6 units may apply toward degree.

CHEM 160 - Physical Chemistry

4 unit(s)

Introduction to the fundamental principles of physical chemistry. Thermodynamics, kinetics, quantum mechanics, and spectroscopy.

Prerequisite(s): CHEM 55, PHYS 2B, and MATH 30 or MATH 30X (all with grades of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 161A - Physical Chemistry

3 unit(s)

Principles of classical physical chemistry. Chemical thermodynamics, kinetics, and electrochemistry.

Prerequisite(s): CHEM 55 (or CHEM 1B and upper division standing for engineering majors), PHYS 50,

and MATH 32 or MATH 32X (all with grades of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 161B - Physical Chemistry

3 unit(s)

Principles of modern physical chemistry. Quantum chemistry, spectroscopy, and statistical mechanics.

Prerequisite(s): CHEM 161A and PHYS 52 (with grades of "C" or better; "C-" not accepted). Upper division standing.

Grading: Letter Graded

CHEM 162L - Physical Chemistry Lab

2 unit(s)

Physical chemical measurements with data analysis and written reports.

Lab 6 hours.

Prerequisite(s): CHEM 100W or ENGR 100W; CHEM 161A or CHEM 160 (all prerequisites with grades of "C" or better; "C-" not accepted).

Corequisite(s): If using CHEM 161A as a prerequisite, either CHEM 161B or CHE 158 are required as a co-requisite.

Grading: Letter Graded

CHEM 170A - Macromolecular, Supramolecular & Nanoscale Systems

1 unit(s)

Introduction to macromolecular, supramolecular, and nanoscale systems and the principles that govern them including preparation, characterization, and physical properties, with an emphasis on applications of these materials in chemistry and beyond.

Prerequisite(s): CHEM 112B with grade of "C" or better (C- not accepted) or with instructor consent.

Grading: Letter Graded

CHEM 172 - Chemistry of Wine

1 unit(s)

Introduction to the chemistry of important components (organic acids, pigments, tannins, flavor constituents, etc.) of grape wine. Chemical changes that occur during fermentation, maturation, and aging.

Prerequisite(s): CHEM 1B (with a grade of "C" or better; "C-" not accepted) or instructor consent.

Grading: Letter Graded

CHEM 180 - Individual Studies

1-4 unit(s)

Advanced supervised lab work. Work and results described in written and oral reports as required by the instructor. An honors course.

Prerequisite(s): Instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

Note(s): Based on university policy, no more than 4 units of Individual Studies (180) and/or Directed Reading (184) may count for the baccalaureate degree, in total. For students in the Biochemistry Concentration, only 3 CR/NC units can count towards upper division electives. High Impact Practice: Undergraduate Research

CHEM 184 - Directed Reading

1-3 unit(s)

Assigned readings of selected books, journals and papers to fill gaps in training or for contact with new fields. Regular conferences with instructor. Written report required. An honors course.

Prerequisite(s): Instructor consent and CHEM 55. Not available to Open University Students

Grading: Credit/No Credit

CHEM 190 - Introduction to Research

1 unit(s)

Supplemental course taken simultaneously with lower and upper division chemistry lecture courses. Foundational techniques for doing research. Preparation and active participation expected.

Grading: Letter Graded

CHEM 191 - Undergraduate Seminar

0.5 unit(s)

Engaging with presentations of topics within specialized sub-areas of chemistry by SJSU Master's students, SJSU faculty, and faculty and other professionals in the chemistry enterprise beyond SJSU. A total of 2 units may be repeated.

Course may be repeated for credit for up to 2 units.

Grading: Letter Graded

CHEM 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CHEM 199 - Senior Thesis or Project

1 unit(s)

Prerequisite(s): Minimum of 2 units of CHEM 180 or CHEM 184, instructor consent and CHEM 100W. Not

available to Open University Students

Grading: Credit/No Credit

CHEM 213 - Organic Synthesis

3 unit(s)

Synthetic methods and their application to multistep organic syntheses. Emphasis will be placed on synthetic strategy and a mechanistic understanding of synthetic reactions.

Prerequisite(s): CHEM 112B (or equivalent with a grade of "C" or better; "C-" not accepted). Alternate years
3 units.

Grading: Letter Graded

CHEM 216 - Physical Organic Chemistry

3 unit(s)

Application of molecular orbital theory to organic chemistry and related topics.

Prerequisite(s): CHEM 112B and CHEM 161B (or equivalents with grades of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): Alternate years.

CHEM 218 - Organotransition Metal Chemistry

3 unit(s)

Structure and reaction chemistry of compounds which contain transition metal-carbon bonds. Applications to catalytic processes and to organic synthesis.

Prerequisite(s): CHEM 112B and CHEM 145 (or equivalents with grades of "C" or better; "C-" not accepted) or instructor consent.

Grading: Letter Graded

Note(s): Alternate years.

CHEM 231 - Advanced Biochemistry

3 unit(s)

Chemistry of the amino acids, peptides and proteins, the chemistry of enzyme action and introduction to the metabolism of amino acids and related compounds.

Prerequisite(s): CHEM 130B or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): Alternate years.

CHEM 232 - Nucleic Acids

3 unit(s)

Topics include structural features of DNA and RNA, protein-DNA or RNA interactions, chemical and

enzymatic basis for gene expression, and recombinant DNA methods.

Prerequisite(s): CHEM 130C or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): Alternate years.

CHEM 234 - Enzymology

3 unit(s)

Enzyme structure, function, classification, isolation and methodology, mechanisms, theory of catalysis, enzyme kinetics, pH effects, allosterism and regulation.

Prerequisite(s): CHEM 130B or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): Alternate years.

CHEM 236 - Biophysical Methods

3 unit(s)

Advanced lectures on theory and methodology of biophysical measurements. Topics selected from spectroscopic, electromigration and hydrodynamic methods. Practice, limitations and data reduction procedures for each method examined.

Prerequisite(s): CHEM 130A or CHEM 135 (or equivalent with a grade of "C" or better; "C-" not accepted) or instructor consent.

Grading: Letter Graded

Note(s): Alternate years.

CHEM 245 - Advanced Inorganic Chemistry

3 unit(s)

Advanced topics of current interest in inorganic chemistry.

Prerequisite(s): CHEM 145 (or equivalent with grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

Note(s): Alternate years.

CHEM 250 - Current Topics in Analytical Chemistry

3 unit(s)

Lecture, discussion and reading assignments on special topics in analytical chemistry. Topics vary each semester. Course may be repeated for credit for different topics.

Prerequisite(s): CHEM 155 (or equivalent with a grade of "C" or better; "C-" not accepted).

Grading: Letter Graded

CHEM 268 - Laser Spectroscopy

3 unit(s)

Importance of spectroscopy. Interaction of radiation with matter. Instrumentation for laser spectroscopy. Examples of various techniques, cw and pulsed.

Prerequisite(s): PHYS 110B, PHYS 158 or instructor consent.

Grading: Letter Graded

Cross-listed with PHYS 268. Physics and Astronomy is responsible for scheduling.

CHEM 270 - Advanced Chemistry

1-5 unit(s)

Lectures, discussions, and reading assignments in special fields of chemistry. Topics vary. May be repeated for a maximum of 15 units.

Course may be repeated for credit for up to 15 units.

Prerequisite(s): Satisfactory background in upper division chemistry and instructor consent.

Grading: Letter Graded

CHEM 276 - Physical Polymer Chemistry

3 unit(s)

Techniques for characterizing molecular weights of polymers, their distribution functions, polymer chain statistics and solution thermodynamics.

Prerequisite(s): Satisfactory background in upper division chemistry or materials science or instructor consent.

Grading: Letter Graded

Note(s): Alternate years.

CHEM 285 - Seminar

0.5 unit(s)

Presentation of chemical topics by graduate students, faculty and guests. A maximum of 3 units may be repeated.

Course may be repeated for credit for up to 3 units.

Grading: Letter Graded

CHEM 293 - Applied Bioinformatics

3 unit(s)

Bioinformatics theory and applications including sequence search, proteomics, molecular modeling, and combinatorial chemistry. Students will work in teams and be guided in independent inquiry to solve practical bioinformatics problems.

Prerequisite(s): Senior or graduate standing in engineering or science.

Grading: Letter Graded

Cross-listed with CHE 293. Chemical Engineering is responsible for scheduling.

CHEM 297 - MA Special Study

1-3 unit(s)

Supervised individual MA project. Maximum of 12 units may be repeated.

Course may be repeated for credit for up to 12 units.

Pre/Corequisite(s): CHEM 201 and instructor consent. Not available to Open University Students

Grading: Credit/No Credit

CHEM 298 - Research

1-6 unit(s)

Supervised individual laboratory work or directed chemical field studies for the student with adequate preparation. Maximum of 12 units may be repeated.

Course may be repeated for credit for up to 12 units.

Pre/Corequisite(s): CHEM 120S, CHEM 201 and instructor consent. Not available to Open University Students

Grading: Mandatory Credit/No Credit/RP

CHEM 299 - Master's Thesis

1-6 unit(s)

Maximum of 6 units may be repeated.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): CHEM 298, instructor consent and advancement to candidacy for the master's degree. Not available to Open University Students

Grading: Mandatory Credit/No Credit/RP

Note(s): 1-2 units per semester.

CHEM 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in CHEM 299, Master's Thesis

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Chicana and Chicano Studies

CCS 1 - Introduction to Chicana and Chicano Studies

3 unit(s)

Through an interdisciplinary perspective, students learn how Chicana and Chicano Studies examines social issues to analyze theories, problems, resistance, historical development, identity choices, social/cultural contributions, and consciousness among Chicanas and Chicanos.

Satisfies F: Ethnic Studies.

Grading: Letter Graded

CCS 2 - Library Studies

1 unit(s)

An introduction to the library, its resources, and skills for students to be successful in the CCS major and at SJSU. Topics will cover developing a research topic, developing a research strategy, and finding and evaluating print and non-print sources.

May be repeated for credit for up to 2 units.

Grading: Credit/No Credit

CCS 7 - Mexican Folklorico Dance

1 unit(s)

Introduction to Mexican Folklorico Dance. Focus is on the development of fundamental Mexican Folk dance skills and knowledge. Review of the interrelationship of dance culture to origins, holidays, people, and historical context. Students learn danzas & Mestizo dances from various states and regions of Mexico (e.g. Veracruz Huasteca, Tamaulipas Norte) and indigenous community (e.g. Oaxaca Mixe) dance categories.

Satisfies PE: Physical Education

Course may be repeated for credit for up to 4 units.

Grading: Letter Graded

Cross-listed with KIN 7. Chicana Chicano Studies is responsible for scheduling.

CCS 10A - Mexican Americans and the Development of U.S. History and Government

3 unit(s)

The American people and institutions from various ethnic points of view. Historical similarities and differences of various groups that make up the U.S. and its historical/political institutions. From pre-Columbian times to 1865. GE Area: D, meets additional GE Areas when taken with CCS 10B.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Note(s): Must complete the entire sequence (CCS 10A and CCS 10B) to satisfy American Institutions (US123).

CCS 10B - Mexican Americans and the Development of U.S. History and Government

3 unit(s)

The American people and institutions from various ethnic points of view. Historical similarities and differences of various groups that make up the U.S. and its historical/political institutions. From 1865 to the present. GE Area: D, meets additional GE Areas when taken with CCS 10A.

Satisfies D + US123: Social Sciences and American Institutions

Prerequisite(s): CCS 10A.

Grading: Letter Graded.

Note(s): Must complete the entire sequence (CCS 10A and 10B) to satisfy American Institutions (US123).

CCS 25 - The Changing Majority: Power and Ethnicity in America

3 unit(s)

Comparative and historical analysis of racial minorities. Focus on Euro American response to American Indians, Asian Americans, African Americans and Mexican Americans to provide understanding of minority experience in the U.S. as well as American culture.

Satisfies F: Ethnic Studies.

Grading: Letter Graded

Cross-listed with AAS 25 / AFAM 25. Chicana Chicano Studies is responsible for scheduling.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 30 - Race and Ethnicity in Public Space

3 unit(s)

This course focuses on race and ethnicity. Using readings, field trips, media images, and course discussion students learn about racialization in American society. We explore uses of racial and ethnic categories and their institutionalization in everyday life.

Satisfies F: Ethnic Studies.

Grading: Letter Graded.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 40 - Chicana/o Theater: Social Justice Performance Art

3 unit(s)

Explores the history and activist art of Chicana/o theater and performance by reading and discussing works by vanguard dramatists and theater troupes. Culminates in a student-led theater performance that applies the principles of social justice to racial-ethnic representations and the politics of public space at the center of

Chicana/o Theater.

Lecture 1 hour/activity 2 hours.

Grading: Letter Graded.

CCS 74 - Public Address

3 unit(s)

Techniques of effective oral communication. Principles of rhetoric through analysis and critique of contemporary issues concerning Mexican Americans.

Satisfies A1: Oral Communication.

Grading: Letter Graded

CCS 105 - Chicanos: United States/Mexico Relations

3 unit(s)

Exploration of U.S./Mexico relations through the Chicana/o perspective. Emphasis is on both historical and contemporary issues.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

CCS 115 - Chicana/o Families

3 unit(s)

Examines Mexican and Mexican American families from the 19th to the 21st century. Special attention is given to the diversity of family structures in terms of incorporation, settlement, and socio-cultural interfacing within group and with diverse race/ethnic communities.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

CCS 120 - Political Economy and Chicana/o Communities

3 unit(s)

Analysis of the American political and economic systems and institutions and their inter-connections from a Chicana/o perspective. Focus on the changing roles of Chicanas/os in the U.S. and global economies and political processes.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 125 - Chicana/o Community Studies

3 unit(s)

This course is designed to facilitate the growth of interdisciplinary and social justice frameworks and

methodologies in students. It showcases the diversity of research within the Arts, Humanities, and Social Sciences, engaging and informing students in dialogues rooted in abolition and a politics of relationality (interdisciplinarity). It centers on three themes: Self-Knowledge and Chicana/o Studies Skills, Professional Development, and the responsibilities and ethics of Community Engagement.

Grading: Letter Graded.

CCS 127 - Chicanas/os and the Criminal Justice System

3 unit(s)

Crime, delinquency and the interaction between Chicano/Latino communities and the criminal justice system. The roles of government agencies, local law enforcement, the courts and corrections.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 130 - Chicanas and Chicanos in American Society

3 unit(s)

Analysis of the Chicana/o community and its role in US society, emphasizing understanding social change. Covers critical areas of the Chicana/o experience, including: family, politics, gender and sexual orientation, education, immigration, identity, institutional racism and discrimination, class, and environmental justice.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 135 - Contemporary Chicana/o Issues

3 unit(s)

Analysis of selected issues/topics involving Chicano/Latino communities. May be repeated with different topic/issue.

Prerequisite(s): ENGL 1A or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 144 - Chicana/o Literature

3 unit(s)

An examination of selected Chicana/o literature including poetry, short stories, essays, and novels. May be repeated with different topic.

Prerequisite(s): ENGL 1A or instructor consent.

Grading: Letter Graded

CCS 145 - Chicana/o Folklife and Popular Culture

3 unit(s)

Introduction to the expressive culture that emerges from the everyday, lived, and shared experiences within U.S. ethnic Mexican culture. Illustrates the processes by which Chicana/o communities express cultural, political, and cultural identities differently as felt through expressive culture genres, such as music, dance, verbal art and literature, visual arts, and cultural expressions of religion.

Grading: Letter Graded

CCS 147 - Music in Mexican America

3 unit(s)

Introduction to historical and stylistic musical developments in the experience of ethnic Mexicans in the U.S. The course surveys various styles and genres (such as corridos, conjunto, Tejano, Chicana/o rock and rap). No musical (performance) experience is required.

Grading: Letter Graded

CCS 150 - Research Methods

3 unit(s)

A survey of research methods used in Chicana/o studies that address issues in Chicana/o communities.

Prerequisite(s): CCS 2 and CCS 151 or instructor consent. Students should have completed or be currently enrolled in 100W.

Grading: Letter Graded

CCS 151 - Theory in Chicana/o Studies

3 unit(s)

An introduction to the theories and study of race, gender and sexuality in Chicana/o communities. Study of the various theoretical and analytical frameworks that are or have been used in the scholarly field.

Prerequisite(s): CCS 1 and CCS 2

Grading: Letter Graded

CCS 152 - The Story of Chicano Spanish

3 unit(s)

Exploration of the origins, development, and use of the Spanish spoken by Mexican Americans and Chicanas/os in the United States. Examines Chicano Spanish from its roots in Colonial Mexico through its development and use in the United States since the first Spanish/Mexicans settled the American Southwest. Particular focus on the etymology of Chicano Spanish.

Grading: Letter Graded

CCS 160 - Gender and Sexuality in the Chicana/o Community

3 unit(s)

An examination of how patriarchy, race, and class shape Chicanas in their everyday lives in American society. It explores how women resist and challenge the limitations placed on them as a result of being women and members of a racial/ethnic group.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

CCS 170 - Chicana/Chicano Film

3 unit(s)

Analysis of how Chicana/os have been represented in mainstream and independent cinema, as well as how films have shaped the socio-political relations between Chicanas/os and the dominant society.

Prerequisite(s): ENGL 1A and ENGL 2 or instructor consent.

Grading: Letter Graded

CCS 175 - Human Migrations: Global Reach

3 unit(s)

Examines Mexican immigration to the United States within the context of global movements as both historical and contemporary phenomena. Considers social, political, cultural, and economic forces that influence immigration.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

CCS 180 - Individual Studies

1-4 unit(s)

Individual research projects and field activities.

Prerequisite(s): Upper division standing and instructor consent.

Grading: Credit/No Credit

CCS 185 - Teaching in a Diverse Society

3 unit(s)

This course will provide future teachers with an understanding of the ways in which diversity in the classroom influences the learning process and how specific teaching strategies can enhance student learning.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

CCS 190 - Chicana and Chicano Studies Capstone

3 unit(s)

Seminar integrating concepts, analyses, and theories used in Chicana and Chicano Studies and drawing on interdisciplinary research methods to address pressing questions. Students produce an academic capstone project.

Prerequisite(s): CCS 125 CCS 150, CCS 151; Senior Standing; Allowed Declared Major or Minor: Chicana/o Studies.

Grading: Letter graded.

CCS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CCS 200 - Ideology and the Chicana/o Experience

3 unit(s)

Seminar examining the ideological and philosophical forces that shape Chicana/o experiences and identities.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CCS 205 - Chicana/o History

3 unit(s)

Seminar exploring the historical experiences of Chicanas/os, from the indigenous past to the present. Integrates historiography, as it is grounded in an analysis of the development of and changes in the field of Chicana/o history.

Grading: Letter Graded

CCS 210 - Foundations in Chicana/o Studies

3 unit(s)

An analysis of the evolution of Chicana/o thought and intellectual production and the development of the field of Chicana/o Studies. Analyzes the basic constructs and theories underlying Chicana/o Studies, from early works to the present.

Grading: Letter Graded

CCS 215 - Chicanas/os and Education

3 unit(s)

Focus is on key educational issues facing Chicanas/os both historically and currently, including policy, curriculum, cultural conflict, and the different efforts to address them.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

CCS 225 - The Impact of American Institutions on the Chicana/o Community

3 unit(s)

Seminar analyzing the impact of social, political, economic, and cultural systems on Chicana/o communities.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 230 - Policy Analysis and the Chicana/o Community

3 unit(s)

Policy analysis focusing on a specific institution or institutions. Emphasis is on analyzing major issues and social policies that affect the Chicana/o community. Effective strategies to affect social change are examined.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 240 - Applied Chicana/o Studies Seminar

3 unit(s)

Integrates major issues and theories from CCS core courses and applies them to current problems. Includes analyses of the latest research on: politics, economics, gender, immigration, education, community development, sexual orientation, and interethnic conflicts and collaborations.

Prerequisite(s): CCS core.

Grading: Letter Graded/RP.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 252 - Comparative Ethnic Studies

3 unit(s)

Interdisciplinary introduction to critical topics and debates in comparative ethnic studies, including race and representation, racialized and gendered labor and citizenship, indigeneity, feminism, nationalism, segregation and environmental injustices.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

CCS 275 - Research Methods

3 unit(s)

Seminar exploring the methodological challenges posed by Chicana/o Studies. The course helps students develop skills in specific research methods of their choice as well as research proposals for the project/thesis, or other areas of post-graduate work.

Prerequisite(s): Core courses.

Grading: Letter Graded

CCS 298 - Special Studies

1-6 unit(s)

Supervised project with advisor.

Prerequisite(s): Completion of core courses and written consent of the department's graduate advisor.

Grading: Mandatory Credit/No Credit/RP

CCS 299 - Master's Thesis

3-6 unit(s)

Supervised thesis.

Prerequisite(s): Advancement to candidacy for master's degree and written consent of the department's graduate advisor.

Grading: Mandatory Credit/No Credit/RP

CCS 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on dissertation, thesis, or project or in preparation for comprehensive exams beyond the minimum required units for cases in which final deliverables are still in progress and all other degree requirements except the culminating experience have been fulfilled.

Prerequisite(s): Graduate Student, RP recorded for thesis or project courses.

Corequisite(s): Enrollment in no other courses, all degree requirements completed except thesis or project.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Child and Adolescent Development

CHAD 60 - Child Development

3 unit(s)

Foundational course explores child development, from prenatal life through the adolescent years, in the context of the family, community, and culture. Reviews major theories, influences, and milestones of physical, cognitive, and socioemotional domains of development. Requires service-learning in an approved setting.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

CHAD 70 - Lifespan Development in a Global Context

3 unit(s)

Explores influences on physical, cognitive, social, and emotional development across the lifespan (from conception through older adulthood). Special focus on understanding development within a global context through investigation of theories, research, and the role of cultural commonalities and differences in human development around the world.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

CHAD 75 - Imagination, Play and Adult Creativity

3 unit(s)

Explores childhood play and imagination as well as adult creativity and the influence of value systems, economic structures, political institutions, social groups and natural environments on the development of play, imagination and creativity.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Sustainability Focused - SDG 4: Quality Education

CHAD 76 - Child Development Among Media and Emerging Technologies

3 unit(s)

Introduction to research on how the changing media landscape interacts with cultural context to influence child and adolescent behavior and development as well as family functioning. Students evaluate the risks and benefits of engagement with varied types of media at each period of development, make recommendations for ethical policy and practice, and propose new ideas for leveraging emerging technologies to enhance developmental supports for children and families.

Satisfies D: Social Sciences.

Grading: Letter Graded

CHAD 80 - Quantitative Analysis in Developmental Science

3 unit(s)

Practical approach to descriptive and inferential statistics applied to real-world problems related to child and adolescent development. Focus on calculating and translating statistical findings to a variety of audiences. Includes discussion of central tendency, distributions, analysis of variance (ANOVA), correlation, and regression.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I or M-II, or any GE Area B4 course with a grade of C- or better.

Grading: Letter Graded

Note(s): This course must be passed with a C- or better as a CSU graduation requirement.

CHAD 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CHAD 100W - Writing Workshop

3 unit(s)

Development of advanced writing skills in the field of child and adolescent development, with a focus on the development of scientific, professional, analytic, and persuasive writing styles. Students will learn to use writing to clearly convey ideas to specialized and general audiences.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): Upper division standing and completion of A3, ENGL 1B, HUM 2B, or equivalent with a C- or better. Or Graduate/Postbaccalaureate standing.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

CHAD 101 - Research Methods in Developmental Science

3 unit(s)

Study of data collection techniques and methods used in child and adolescent development research, including observation, interview, experiment, and survey. Special attention to interpreting and evaluating the

quality of information reported from a variety of sources.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 102 - Development of Self in a Culturally Diverse Society

3 unit(s)

Examines the influence of institutions and society on families and the psychosocial development of children and adolescents from diverse backgrounds in the United States. Topics include attitude and belief formation, identity development, prejudice and discrimination, structural inequality, constructive communication among individuals, and social movements for equality.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

CHAD 104 - Program Evaluation and Assessment in Community-Based Programs

3 unit(s)

Program evaluation and assessment enables non-profit organizations to better understand and optimize the services they provide to children, youth, and families. Through lecture, discussion, and case studies, students learn the principles and methods of evaluation, with special attention to underlying ethical issues and cultural competencies.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 106 - Concepts of Childhood

3 unit(s)

Explores the historical diversity in the ways in which childhood has been defined; investigates diverse cultural definitions of childhood; examines the impacts of those beliefs and definitions on human development.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

CHAD 130 - Coding for Scientific Discovery

3 unit(s)

The physical universe and its life forms are studied through scientific investigations (via computer modeling/coding) that reflect the epistemology and reasoning of scientific practices. These investigations are contextualized with issues related to diversity, equity, ethics, and the teaching/learning of science.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

CHAD 131 - Equity, Resilience, and Risk in Public Schools

3 unit(s)

Students study the interrelationship of individuals, racial groups, and cultural groups to understand and appreciate issues of diversity, equality, and structured inequality in the U.S., its institutions, and its cultures. Specifically, students explore micro and macro influences that place children's educational trajectory and achievement at risk. Students examine protective factors, at both micro and macro levels, that can help achieve educational equality for all children.

Satisfies SJSU Studies S: Self, Society & Equality in US

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): All of SJSU Studies courses require upper division standing.

Sustainability Focused - SDG 4: Quality Education

CHAD 132 - Education from a Global Perspective

3 unit(s)

Explores the meaning of education as a concept, or philosophy, both within the US and around the globe. Concepts of education, such as education as empowerment or education as meeting national goals, are examined. Explores how educational traditions outside the US have influenced American education systems (with respect to culture and societal norms), how cultures develop distinctive education systems and how those education systems interact with education systems in other cultures. Provides a foundation for understanding K-8 visual and performing arts standards as well as standards for K-8 history and social studies.

Satisfies SJSU Studies V: Culture, Civil & Global Understanding

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

CHAD 133 - Introduction to K-8 Math/Science Instruction

3 unit(s)

Introduction to effective instruction and assessment in K-8 math/science. Reviews learning and pedagogical theories and methods for adapting curriculum for all learners. Reviews developmental processes related to

achievement in math/science. Students develop knowledge of Common Core Standards for math/science.

Prerequisite(s): Upper division standing; probationary admission to the ChAD credential program; and passing the CBEST.

Grading: Letter Graded

CHAD 134 - K-8 Math & Science Practicum

6 unit(s)

Prepares teachers to teach mathematics and science in culturally, ethnically, and linguistically diverse K-8 classrooms. Examines the rationale for interdisciplinary curriculum design and enables students to make informed decisions about creating and implementing interdisciplinary curriculum that strengthens the teaching/learning process.

Prerequisite(s): Upper division standing; admission to the ChAD credential program; passing the CSET; CHAD 133; Certificate of Clearance from the CTC; and current (last 3 years) TB tests (negative results).

Grading: Letter Graded

CHAD 135 - Development of Language & Literacy in Children

3 unit(s)

An overview of the development of children's communicative competence as well as the foundations of language and literacy in the context of a diverse society. Course content covers theories, contexts for development, linguistic diversity, and information/media literacy. A service learning component of 15 hours for the semester is required.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 136 - Foundations of K-8 Language Arts & Social Studies

3 unit(s)

Introduction to effective instruction and assessment in reading/language arts/social studies. Reviews learning/pedagogical theories, methods for adapting curriculum for all learners, and developmental processes underlying achievement in these areas. Students develop knowledge of Common Core Standards for language arts/social science.

Prerequisite(s): Upper division standing, Admission to the ChAD credential program and a passing score on the CBEST and CSET.

Grading: Letter Graded

CHAD 137 - K-8 Language Arts & Social Studies Practicum

6 unit(s)

Prepares educators to teach language arts/social science in culturally, ethnically, and linguistically diverse K-8 classrooms. Discusses methods/strategies and development of a balanced, comprehensive, evidence-based program that addresses the needs of all learners. Technology use and curricular integration are explored.

Prerequisite(s): Admission to the ChAD credential program, CHAD 136, and a passing score on the

CBEST and CSET.

Grading: Letter Graded

CHAD 138 - K-8 Student Teaching and Seminar

12 unit(s)

Supervised teaching in a public school classroom. Student Teaching in the field and seminar on campus. Students explore their teaching experiences in the context of research on effective teaching and learning and complete the Cal-TPA. Meets all requirements for student teaching.

Prerequisite(s): Admission to the ChAD credential program; Certificate of clearance, and passage of the CBEST and CSET; Program Director Consent.

Grading: Credit/No Credit

CHAD 149 - Child Health and Activity

3 unit(s)

Explores concepts, frameworks, and national standards regarding children's health and physical education using an interdisciplinary curriculum. Special attention is given to factors that influence children's health and wellness, safety and prevention, motor skill development, and lifelong healthy practices.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

Cross-listed with KIN 149. Child and Adolescent Development is responsible for scheduling.

CHAD 150 - Development of Language and Communicative Competence

3 unit(s)

Survey of major topics in the development of language and communicative competence. Includes discussion of language acquisition, contexts for development, language assessment, relationships between language/cognition and language/culture, and bilingualism.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 151 - Developing Literacy in a Diverse Society

3 unit(s)

Introduces an understanding of learning and teaching literacy in a linguistically and culturally diverse and technologically complex society. Presents a balanced approach to developing literacy, including an understanding and use of the major descriptors of developing literacy, appropriate assessment methods and instruments, and a developmental and analytical appreciation for reading and writing strategies, conventions, and applications. A service learning component of 15 hours for the semester is required.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 152 - Foundations for Early Childhood Curriculum

3 unit(s)

Introduces foundations for implementing integrated developmentally appropriate and comprehensive curriculum connected to children's purposeful and playful experiences. Addresses historical and theoretical issues of curriculum models; assessment of children's learning; research and standards applicable to curriculum in language, literacy, and STEAM (science, technology, engineering, arts, and math) content areas. A service learning component of 15 hours for the semester is required.

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Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

Note(s): The majority of approved service learning sites require proof of a negative TB test and background clearance.

CHAD 156 - Social Media and Youth Civic Engagement

3 unit(s)

Exploration of the impact of social media on youths' ability to learn about, discuss, and act on social issues that matter to them. Students analyze online dialogue about pressing social issues, learn about promising strategies developed by activists and educators, and develop and practice techniques for using social media to raise awareness about and discuss social issues.

Grading: Letter Graded

CHAD 157 - Program Management in Community Organizations

3 unit(s)

Explores program management and leadership within nonprofit and community-based organizations serving children, youth, and families. Gives attention to features of positive developmental settings, organizational structure and leadership, development and maintenance of resources (e.g., fundraising, partnerships, volunteers), staff supervision, evaluation, and development as well as maintaining an ethical and culturally competent organization. A service learning component of 15 hours for the semester is required.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 158 - Practicum in Community Organizations

3 unit(s)

Practical application of the theoretical information acquired across the ChAD major coursework. Students will participate in the context of a community-based organization that enhances equitable outcomes for children, youth and families.

Lecture 1 hours/Lab 6 hours.

Prerequisite(s): CHAD 60 or CHAD 70, and upper division standing.

Grading: Letter Graded

Note(s): Course requires 6 hours per week of non-paid fieldwork in an approved non-profit setting.

Practicum sites for this course typically require availability during weekday afternoons as well as a TB test and background clearance. Please check with your academic advisor if you have any concerns.

CHAD 159 - Practicum in K-8 Education

3 unit(s)

Practical application of evidence-based and culturally sustaining practices through student participation in K-8 classrooms. Includes a review of pedagogical principles and instructional techniques. Meets pre-professional fieldwork hours for students seeking to enter a Multiple Subject Teacher Credential program.

Lecture 1 hours/Lab 6 hours.

Prerequisite(s): CHAD 60 or CHAD 70, and upper division standing.

Grading: Letter Graded

Note(s): Course requires 6 hours per week of non-paid fieldwork in a public school classroom (K to 8th grade). Middle school placements must be in a self-contained or core classroom. Practicum sites usually require a TB test and a background clearance. Please check with your academic advisor if you have any concerns.

CHAD 160 - Practicum in Early Childhood Education

3 unit(s)

Practical application of evidence-based practices based on early childhood education principles and theories while engaging with young children in the SJSU's Child Development Lab Preschool Programs. These programs follow Title 22 Licensing Regulations.

Lecture 1 hour/Lab 6 hours.

Prerequisite(s): CHAD 60 or CHAD 70, and upper division standing.

Grading: Letter Graded

Note(s): Course requires 6 hours per week of non-paid fieldwork at SJSU Lab Preschool. There are two programs students may choose from: Toddler Lab (2-3 year olds) and Multi-Age Lab (3-5 year olds). Requires TB test, background clearance, and proof of vaccinations. Please check with your academic advisor if you have any concerns.

Sustainability Related - SDG 4: Quality Education

CHAD 161 - Administration of Early Childhood Programs

3 unit(s)

Surveys appropriate administrative policies and procedures relevant to designing, administering, and assessing high quality early learning programs. Focus is on family engagement, staff development, integrated curriculum design, and program administration.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 162 - Cultural Influences in Childhood and Adolescence

3 unit(s)

Examination of similarities and differences in social, emotional, cognitive, and language development among children and adolescents from different cultural and ethnic groups in the United States and around the world. Agents, processes, and contexts that contribute to continuity of and change in cultural systems.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

Sustainability Related - SDG 4: Quality Education

CHAD 163 - Critical Issues in Adolescent Development

3 unit(s)

Examines important changes in adolescents' physical, cognitive, social and emotional growth with special attention on contextual factors that shape the diverse experiences of adolescents during this period of transition from childhood to adulthood.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

Sustainability Related - SDG 4: Quality Education

CHAD 164 - Contemporary Parenting

3 unit(s)

Explores concepts, theories, and substantive issues in parenting from a multicultural perspective. Focuses on how parenting changes as the child ages and current issues in parenting. Special attention is given to variation in family structure, race and ethnicity, cultural expectations, community context, and the impact of parenting on parent-child relationships.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 165 - Risk and Resilience in a Community Context

3 unit(s)

Explores and applies theories and current research to understand concepts of risk and resilience at the individual, family, community, societal, and global levels. Examines risk and protective factors as well as prevention and intervention resources associated with adversity and resilience to promote healthy youth development across diverse communities and cultures.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

CHAD 168 - Social and Emotional Development

3 unit(s)

Explores areas of social and emotional development including processes related to self-regulation, identity development, and social relationships. Emphasis is placed on cultural influences on children's and

adolescents' social and emotional well-being.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 169 - Motivating Children and Adolescents in Educational Settings

3 unit(s)

Examines theories of motivation from historical and contemporary perspectives. Focuses on theory and empirical evidence bearing upon the psychological process influencing behavior. Explores issues of diversity and the practical implications for informal and formal educational settings.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 170 - Cognitive Development in Context

3 unit(s)

An empirical and theoretical examination of children's thinking from birth through young adulthood. The course covers major topics and issues in cognitive development with an emphasis on how contextual factors, such as family, school, and other cultural environments, influence individual differences.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 173 - Critical Issues in Infant/Toddler Development

3 unit(s)

Examines physical, cognitive, social, emotional, and language development in the first three years of life, and contextual factors (e.g., culture, family, childcare) that influence these developmental changes. Attention given to best practices in infant and toddler education and care, factors that place infants and toddlers at risk (e.g., racial and economic inequities), and strengths-based perspectives of young children and their families.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

CHAD 180 - Individual Studies

1-4 unit(s)

Individual work on special topics by arrangement.

May be repeated for credit.

Prerequisite(s): Upper division standing.

Grading: Credit/No Credit

CHAD 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International

Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CHAD 195 - Senior Seminar in Child & Adolescent Development

3 unit(s)

Provides students with an integrated understanding of critical social problems and research in child and adolescent development. Focuses on policy and advocacy across a range of contexts, including poverty, family, health, and education.

Prerequisite(s): CHAD major, 12 units completed in CHAD, senior standing, and completion of CHAD 100W or LLD 100W with a grade of 'C' or better ('C-' not accepted).

Grading: Letter Graded

CHAD 199 - Honors in Child & Adolescent Development

1-3 unit(s)

Senior project on advanced topics in Child and Adolescent Development. Written paper and oral presentation of a project required. Enrollment limited to seniors pursuing departmental honors.

Prerequisite(s): Senior or graduate standing and instructor consent.

Grading: Credit/No Credit

CHAD 252 - Community Leadership for Child & Family Wellness

3 unit(s)

Seminar helps students refine management and leadership skills to effectively evaluate programs; assess and address risk; and promote resilience with children and families. Course prepares students to use an equity lens to empower children and families, and to promote health and wellness in their communities.

Grading: Letter Graded

CHAD 254 - Professional Practice with Children and Families

3 unit(s)

Course provides opportunities for practical application of theory and research to working with diverse children, youth, and families in community settings. Students will apply leadership, advocacy, and evaluation skills in community-based organizations that enhance equitable outcomes for diverse children, youth and families.

Grading: Letter Graded

CHAD 260A - Seminar in Child and Adolescent Development: Research

3 unit(s)

Advanced study of recent child and adolescent development research. Examination of quantitative and qualitative research methodologies used in the field.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing; 12 units in CHAD or related disciplines; CHAD 101 (or equivalent); CHAD majors.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CHAD 260B - Seminar in Child and Adolescent Development

3 unit(s)

Capstone course with advanced study of recent research and writings in the area of child and adolescent development. Course includes completion of the cumulative experience project.

Prerequisite(s): Graduate standing; 9 units in CHAD MA core courses, co-registration in CHAD 298; CHAD majors.

Grading: Letter Graded

CHAD 261 - Seminar in Early Childhood Curriculum

3 unit(s)

Advanced understanding of early childhood curriculum and practice, including foundational information; integrated curriculum planning across content areas; family engagement; and assessments of learning and development. Includes the practical application of developmentally appropriate and culturally sustaining practices through student participation in an early childhood practicum experience.

Lecture 2 hours/lab 3 hours. Course requires 3 hours per week of non-paid fieldwork in an approved ECE setting. Practicum sites for this course typically require availability during the weekday as well as a TB test and background clearance. Please check with your academic advisor if you have any concerns.

Grading: Letter graded.

CHAD 262 - Culture and Diversity in Child & Adolescent Development

3 unit(s)

Examination of factors influencing the development of children and adolescents in a multicultural society. Attention to theory and research related to diverse populations with a focus on cultural diversity and social justice. Strength-based approaches to advocacy, policy, and services are discussed.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

CHAD 264 - Seminar in Family Systems

3 unit(s)

Examination of the interconnectedness among family subsystems and its influence on child/adolescent development and family well-being. Application of family systems perspectives to develop evidence-based practices to promote child, adolescent, and family well-being.

Grading: Letter graded.

CHAD 266 - U.S. Social Policy Affecting Children and Families

3 unit(s)

Survey of dominant social issues which affect the development of children, youth, and families and the role of public policy in addressing those issues.

Grading: Letter Graded

CHAD 268 - Seminar in Social and Emotional Development

3 unit(s)

Examination of current issues in childhood and adolescent social and emotional development: processes underlying self-esteem and self-control and emergence of the self. Contributions of family, school and society are considered.

Prerequisite(s): 9 units in CHAD or related disciplines.

Grading: Letter Graded

CHAD 270 - Seminar in Cognitive and Language Development

3 unit(s)

Examination of major topics in cognitive and language development: stages of development, nature/nurture controversy, stability of behavior over time. Individual differences in cognition and cognitive styles are also explored.

Prerequisite(s): 9 units in CHAD or related disciplines.

Grading: Letter Graded

CHAD 272 - Seminar in Early Childhood Development

3 unit(s)

Examination of major topics in early childhood development in the first eight years, such as cognitive, language, and physical development; processes underlying social and emotional regulation; and adult-child relationships. Individual differences in development and contributions of family, school, and society are also explored. The course provides a holistic foundation of knowledge in early childhood development (ages 0-8 years) that can be applied to developmentally and culturally appropriate practices involving young children in classrooms and other settings.

Grading: Letter graded.

CHAD 274 - Seminar in Middle Childhood and Adolescent Development

3 unit(s)

Advanced study of major topics in socioemotional and cognitive development, and the contexts that influence that development, in middle childhood and adolescence. Provides a foundation of knowledge in middle childhood and adolescent development to facilitate developmentally and culturally appropriate practices with children, youth, and families in a range of settings.

Grading: Letter graded.

CHAD 285 - Special Topics in Child & Adolescent Development

3 unit(s)

Content varies by semester. Topics may include bilingual and multilingual development, the role of nature and context on family wellbeing, and gender identity development, among others. May be repeated for credit when content changes for a maximum of 6 units.

May be repeated for credit for up to 6 units.

Prerequisite(s): Graduate standing.

Grading: Letter graded.

CHAD 298 - Special Studies in Child and Adolescent Development

3-6 unit(s)

Supervised study in the field of child development.

Prerequisite(s): Advancement to candidacy for the master's degree.

Grading: Mandatory Credit/No Credit/RP

CHAD 299 - Master's Thesis

3-6 unit(s)

Supervised thesis in the field of child development.

Prerequisite(s): Advancement to candidacy for the master's degree.

Grading: Mandatory Credit/No Credit/RP

Chinese

CHIN 1A - Elementary Chinese

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Grading: Letter Graded

CHIN 1B - Elementary Chinese

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): CHIN 1A (or equivalent).

Grading: Letter Graded

CHIN 25A - Intermediate Chinese

4 unit(s)

Development of basic skills in the use of Mandarin; preparation for advanced courses in the language.

Satisfies C2: Humanities.

Prerequisite(s): 8 units of college Chinese (or equivalent)

Grading: Letter Graded

CHIN 25B - Intermediate Chinese

4 unit(s)

Continuation of CHIN 25A. Preparation for advanced courses in the language.

Satisfies C2: Humanities.

Prerequisite(s): 12 units of college Chinese (or equivalent)

Grading: Letter Graded

CHIN 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CHIN 101A - Advanced Chinese

4 unit(s)

Readings related to culture, discussion, syntax and composition. May be repeated once for credit.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Four semesters of college Chinese (or equivalent).

Grading: Letter Graded

Note(s): Year course.

CHIN 101B - Advanced Chinese

4 unit(s)

Readings related to culture, discussion, syntax and composition. May be repeated once for credit.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): 20 units of college Chinese (or equivalent)

Grading: Letter Graded

Note(s): Year course.

CHIN 102 - Chinese Culture

4 unit(s)

Traditional Chinese culture in light of contemporary values. Ideographs, folk tales, festivals, creeds and customs, myths and superstitions, opera and the arts, women, the art of living.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): Taught in English.

Cross-listed with ASIA 102. World Languages and Literatures is responsible for scheduling.

CHIN 110 - Structure of the Chinese Language

4 unit(s)

Introduction to study of Chinese dialects and Mandarin grammar from historical viewpoint, with reference to early development and present diversity. Emphasis on the writing system and areal features of the language.

Prerequisite(s): CHIN 25B or instructor consent.

Grading: Letter Graded

CHIN 130 - Readings in Chinese Culture

4 unit(s)

Readings in selected aspects of Chinese culture, e.g., philosophical, social, political, historical. Texts may be chosen from scholarly essays, newspaper articles or creative narrative. May be repeated when content changes.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): CHIN 101B or instructor consent

Grading: Letter Graded

CHIN 132 - Special Topics in Chinese for Careers

4 unit(s)

Chinese 132 provides a focus on the use of Chinese for various professions, and examines in depth selected topics in regard to Chinese in the professional world. Course repeatable when content changes.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): CHIN 25B or instructor consent.

Grading: Letter Graded

CHIN 140 - Chinese Culture and Politics Through Literature

3 unit(s)

Exploration of the interaction between culture, politics and literature as reflected in the contemporary (post-1949) narrative, poetry and drama of China, Taiwan and Hong Kong.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Taught in English.

Cross-listed with ASIA 140. World Languages and Literatures is responsible for scheduling.

CHIN 180 - Individual Studies in Chinese

1-3 unit(s)

Individual work by arrangement.

Prerequisite(s): Upper division standing in Chinese (or equivalent) and instructor consent.

Grading: Credit/No Credit

CHIN 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Civil and Environmental Engineering

CE 8 - Plane Surveying

3 unit(s)

Theory and practice of engineering measurements. Techniques and instruments used establishing horizontal and vertical control. Topographic methods.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): MATH 19 (or eligibility for MATH 30 or MATH 30X). Allowed Declared Majors: Civil

Engineering, and Geology.

Grading: Letter Graded

CE 20 - Engineering Graphics, CAD and Programming

3 unit(s)

Develop visualization skills by using technical sketching, AutoCAD and manual drafting to solve civil engineering graphical problems. Subjects include: isometric sketching, orthographic projection, descriptive geometry, and plan reading. Writing computer programming code and logic flow.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): MATH 19 (or eligibility for MATH 30 or MATH 30X).

Grading: Letter Graded

CE 95 - Theory and Application of Statics

3 unit(s)

Detailed study of bodies in equilibrium to provide background for advanced study of engineering mechanics. Applications to general three-dimensional bodies and structural systems. Topics include free body diagrams, centroids, internal forces, distributed loads, moments of inertia and friction.

Prerequisite(s): MATH 31X or MATH 31, and PHYS 50.

Grading: Letter Graded

CE 99 - Introductory Statics

2 unit(s)

Introduction to the study of two-dimensional bodies in equilibrium. Applications to two-dimensional particles and structural systems. Topics include free body diagrams, centroids, and moments of inertia.

Prerequisite(s): MATH 31 and PHYS 50. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CE 104 - Introduction to GIS in Civil Engineering

3 unit(s)

Fundamentals of geographic information systems (GIS) for civil engineering applications. Topics include: GIS data types, projections, coordinate transformations, spatial analysis approaches, raster and vector analyses, and map generation.

Prerequisite(s): CE 8, CE 20, MATH 33A, and CE 192.

Grading: Letter Graded

CE 112 - Mechanics of Materials

3 unit(s)

Stress distributions, strain, stresses and deformations in machines and structures subject to axial, bending and torsional loads, including combined loads. Stability of columns.

Prerequisite(s): CE 95 or CE 99, MATH 33A. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

CE 120 - Construction Materials Laboratory

1 unit(s)

Properties, testing and design of civil engineering construction materials, including aggregates for concrete and bituminous mixes. Theory and design of bituminous and portland cement-aggregate mixes.

Misc/Lab: Lab 3 hours.

Prerequisite(s): CE 112. Allowed Declared Major: Civil Engineering.

Grading: Letter Graded

CE 121 - Transportation Engineering

3 unit(s)

Principles, theories, practices in transportation engineering design; planning surveys and data analysis; traffic flow characteristics; location and geometric design of systems to include highways, rail, airports, waterways and pipelines. Problems in planning, design and operations.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): CE 8, CE 20, MATH 32 or MATH 32X, PHYS 50. Allowed Declared Major: Civil Engineering.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

CE 122 - Traffic Engineering

3 unit(s)

Design of traffic control systems to include traffic signals and other traffic control devices for safe and efficient vehicular flow; traffic surveys; traffic operations.

Prerequisite(s): MATH 32 or graduate standing. Junior standing. Allowed Declared Major: Civil Engineering.

Grading: Letter Graded

CE 123 - Highway and Street Design

3 unit(s)

Geometric design of highways and streets. Discussion of design policy. Safety and operational features as well as the evaluation of improvements.

Prerequisite(s): CE 121 or graduate standing

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

CE 130 - Civil Engineering Economic Analysis

2 unit(s)

Marginal theoretic procedures for identifying optimal investment alternatives. Algorithmic approaches to one-dimensional deterministic benefit-cost analysis. Multidimensional and probabilistic decision problems.

Prerequisite(s): MATH 32 or MATH 32X. Allowed Declared Major: Civil Engineering.

Grading: Letter Graded

CE 131 - Introduction to Construction Engineering

3 unit(s)

Introduction to construction engineering, construction contract types, contracting documents, project delivery methods, owner-engineer-contractor relationships, professional liability, engineering ethics, construction cost estimates, construction planning, basic concepts and techniques of scheduling, creating CPM scheduling, updating and reporting a schedule.

Prerequisite(s): CE 130.

Grading: Letter Graded

CE 132 - Construction Methods and Equipment

3 unit(s)

Construction earthmoving, excavating, loading, compacting; safety; equipment productivity; construction methods and materials.

Prerequisite(s): CE 130, CE 140 or graduate standing

Grading: Letter Graded

CE 134 - Project Management for Construction

3 unit(s)

Methods of planning and controlling construction including the participants, processes and techniques required to maintain the life cycle of a construction project. Planning construction operations, estimating, analyzing the bid process, jobsite operations and functions, safety, quality and scheduling.

Prerequisite(s): CE 131 or Graduate standing. Junior Standing in Engineering.

Grading: Letter Graded

CE 140 - Geotechnical Engineering

3 unit(s)

Soil as an engineering material; Classification, compaction, consolidation, shear strength, and permeability of soils; Basic design concepts for bearing capacity of shallow foundations, lateral earth pressures and slope stability.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): CE 20, CE 112, ME 111, ENGR 100W. Allowed Declared Majors: Civil Engineering, Geology.

Grading: Letter Graded

CE 144 - Groundwater and Filtration

3 unit(s)

Flow of water through soil; Groundwater and Geologic Processes; Flow nets for soil barriers; Pollutant Flow and Remediation; Seepage; Construction Dewatering.

Prerequisite(s): CE 140 and CE 150 or graduate standing.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

CE 145 - Foundation Engineering

3 unit(s)

Use of field data in Geotechnical design; Design of shallow foundations for bearing capacity and settlement; Design of deep foundations for shear and tip resistance; Analysis of mat foundations. Design of retaining walls.

Prerequisite(s): CE 140 or graduate standing

Grading: Letter Graded

CE 150 - Introduction to Hydrology and Hydraulics

3 unit(s)

Analysis and design of open channels and pipe networks. Introduction to hydraulic structures, machinery, basic hydrology, and computer modeling. Social impacts of Civil Engineering.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): CE 20, ME 111, ENGR 100W.

Grading: Letter Graded

CE 152 - Engineering Hydrology

3 unit(s)

Hydrologic processes; streamflow, hydrographs and flood routing; groundwater hydraulics; flood frequency analysis.

Prerequisite(s): CE 150 or graduate standing

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

CE 154 - Hydraulic Design

3 unit(s)

Design of hydraulic structures-reservoirs, dams, spillways, energy dissipators, outlet works, hydroelectric systems and flood control.

Prerequisite(s): CE 150 or graduate standing.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

CE 160 - Structural Analysis

3 unit(s)

Analysis of statically determinate beams, frames, and plane trusses. Force method of analysis of statically indeterminate structures. Applications to building design. Introduction to computer analysis.

Misc/Lab: Lecture 2 hours/computation period 3 hours.

Prerequisite(s): CE 20, CE 112, and ME 101. Allowed Declared Major: Civil Engineering.

Grading: Letter Graded

CE 162 - Structural Concrete Design

3 unit(s)

Strength design and alternative load and strength reduction factor theories of reinforced concrete. Design of beams, Slabs, compression members, foundations and building frames. Design project required. Social impacts of Civil Engineering.

Lecture 2 hours/Design Period 3 hours.

Prerequisite(s): CE 120, CE 160, and ENGR 100W. Allowed Declared Major: Civil Engineering.

Grading: Letter Graded

CE 163 - Design of Steel Structures

3 unit(s)

Structural steel design elements for buildings and bridges, tension members, beams, columns, bolted and welded connections. Design project.

Prerequisite(s): CE 160 or graduate standing. Allowed Declared Major: Civil Engineering.

Grading: Letter Graded

CE 164 - Design of Wood Structures

3 unit(s)

Design of structural elements for wood buildings. Horizontal and vertical plywood diaphragms for seismic and wind loads. Tension members, beams, columns and connections. Design project using the National Design Specifications and the Uniform Building Code.

Prerequisite(s): CE 160 and graduate standing

Grading: Letter Graded

CE 165 - Earthquake Resistant Design

3 unit(s)

Seismic resistant design according to the provisions of the Uniform Building Code. Elements of seismic hazard analysis.

Prerequisite(s): CE 160 or graduate standing

Grading: Letter Graded

Sustainability Related - SDG 1: No Poverty

CE 170 - Principles of Environmental Engineering

3 unit(s)

Introduction to environmental (water, air and land) pollution problem, surface water and groundwater quality, water and wastewater treatment processes, drinking water and wastewater treatment flowsheets, design of drinking water treatment processes, contemporary environmental issues, and environmental sustainability.

Misc/Lab: Lecture 2 hours; lab/design 3 hours.

Prerequisite(s): CE 20, ME 111, CHEM 1A, and ENGR 100W

Grading: Letter Graded

Sustainability Focused - SDG 6: Clean Water and Sanitation

CE 172 - Solid Waste Management Engineering

3 unit(s)

Introduction to engineering analysis, planning and design problems associated with storage, collection, processing, treatment and disposal of solid waste.

Prerequisite(s): CE 170 or graduate standing.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

CE 174 - Design of Water Distribution and Wastewater Collection Systems

3 unit(s)

Application of environmental engineering and fluid mechanics to the design of water distribution systems, wastewater collection systems, water/wastewater storage systems, and appurtenances.

Prerequisite(s): CE 150 and CE 170

Grading: Letter Graded

Sustainability Focused - SDG 6: Clean Water and Sanitation

CE 180 - Individual Studies

1-3 unit(s)

Individual work on special topics by arrangement. Repeatable: Repeatable for credit.

Prerequisite(s): Upper division standing. Allowed Declared Major: Civil Engineering. Not available to Open University Students.

Grading: Credit/No Credit

CE 181 - Civil Engineering Systems

3 unit(s)

Principles of systems design for civil engineers, including formulation of project objectives, constraints, problem statements, alternatives generation, alternatives evaluation and decision analysis. Principles demonstrated through case studies.

Prerequisite(s): CE 121, CE 130, CE 131, CE 140, CE 150, CE 160, CE 170, CE 192

Grading: Letter Graded

CE 185 - Undergraduate Curricular Practical Training

1 unit(s)

Fieldwork for Civil Engineering undergraduate students. A report is required at the end of the semester addressing goals set at the start of the assignment.

Course is repeatable once for credit.

Prerequisite(s): Upper division standing, in good standing, and completed at least two semesters of bachelor's level work at SJSU. Allowed Declared Majors: Civil Engineering.

Grading: Credit/No Credit

CE 190 - Numerical Solutions of Civil Engineering Problems

2 unit(s)

Reformulating linear and non-linear, static and dynamic civil engineering problems for numerical solution by computers.

Prerequisite(s): MATH 33A, ENGR 10. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

CE 192 - Probabilistic Models for Civil Engineering Decisions

2 unit(s)

Elementary concepts of probability theory, statistics and decision theory. Applications to modeling and decision-making.

Prerequisite(s): MATH 32 MATH 32X.

Grading: Letter Graded

CE 192I - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CE 204 - Advanced GIS Applications in Civil Engineering

3 unit(s)

Advanced spatial data analysis and modeling using GIS pertaining to the core areas of Civil Engineering. Topics include: analyzing vector and raster data, processing Digital Elevation Model (DEM), using spatial analyst and network analyst tools, and automating geoprocessing tasks using model builder.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): CE 104 or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CE 210 - Advanced Mechanics

3 unit(s)

Beams on elastic foundations, curved beams, torsion of non-circular sections, introduction to the theory of elasticity, three dimensional stress and strain, failure theories, deep beams.

Prerequisite(s): CE 160 and MATH 33A (or equivalent).

Grading: Letter Graded

CE 212 - Structural Dynamics

3 unit(s)

Analysis of lumped and distributed parameter systems subject to dynamic loading; matrix analysis and orthogonal functions applied to beams, frames and complex structures. Introduction to earthquake response spectrum analysis.

Prerequisite(s): CE 160 (or equivalent).

Grading: Letter Graded

CE 220 - Rigid and Flexible Pavement Design

3 unit(s)

Advanced study of the theories and practices in the structural design of flexible and rigid pavements for highways and airports; magnitude and arrangement of wheel loads; stresses in flexible and rigid pavements; pavement behavior under moving loads; design of bases and subbases; methods of structural design of flexible and rigid pavements; pavement evaluation, strengthening and selection criteria; accelerated traffic and loading tests.

Prerequisite(s): CE 120 and CE 140 (or equivalent).

Grading: Letter Graded

CE 221 - Advanced Highway Design

3 unit(s)

Advanced study of highway location and design principles; advanced analysis of criteria controlling geometric design of highways including design speed, design volume, vehicle requirements and capacity; advanced theory and practice in the design of alignment, grade and cross-section; design of intersections and interchanges; access control, frontage roads.

Prerequisite(s): CE 121 (or equivalent).

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

CE 222 - Transportation Engineering Planning

3 unit(s)

Technical and economic evaluation of transportation improvements; capacity restraints; geometric design factors, location and relocation principles; optimization theory in transportation system design; user costs and benefits; transport equipment; operation and safety; economic impact, construction and maintenance practices; intergovernmental coordination, cooperation, responsibility and financial participation.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): CE 121 and CE 130.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 11: Sustainable Cities and Communities

CE 224 - Traffic Operations

3 unit(s)

Flow, density and speed characteristics. Capacity and level of service analysis of transportation facilities with emphasis on highways and streets. Analysis of strategies and tactics, including traffic control, related to optimal use of facilities.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CE 225 - Public Transportation Systems

3 unit(s)

Performance characteristics of public transportation systems. Planning, design and operational issues related to public transportation systems. Emerging technologies.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): CE 121 or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

CE 226 - Topics in Transportation Engineering

3 unit(s)

Presentation and discussion of special topics in transportation engineering. Topics may vary each semester. Course may be repeated with instructor consent.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

CE 232 - Construction Estimating and Cost Analysis

3 unit(s)

Estimating and bid preparation in the construction industry including cost analysis techniques for labor, materials, equipment and overhead costs on a construction project. Development of schedules and networks for construction.

Prerequisite(s): CE 130 and CE 131.

Grading: Letter Graded

CE 234 - Construction Law

3 unit(s)

Construction contracts and specifications, bid documents, sources of law, agency relationships, contract formation, breach of contract, tort law, contract interpretation, changes, mechanics liens, claims and disputes.

Prerequisite(s): CE 131 (or equivalent).

Grading: Letter Graded

CE 236 - Construction Operations Analysis

3 unit(s)

Overall aspects of productivity improvement for construction operations. Quantitative methods for measuring, analyzing and improving productivity at job sites. Concepts of computer simulation to study, plan and optimize construction operations.

Prerequisite(s): CE 132 or instructor consent.

Grading: Letter Graded

CE 237 - Sustainable Construction

3 unit(s)

Green construction processes, sustainable construction materials, material recycling and reuse in construction, green construction policy, green building case study, economic analysis of green buildings, and LEED rating systems and certification.

Prerequisite(s): CE 130 and CE 131, or instructor consent.

Grading: Letter Graded

CE 238 - Advanced Construction Project Management

3 unit(s)

Provides the principles and techniques of construction project management and develops the engineering project management skills necessary to successfully participate in the management of the project delivery process.

Prerequisite(s): CE 131 or instructor consent.

Grading: Letter Graded

CE 239 - Information Technology in Construction

3 unit(s)

Provides information technology applications in construction, from traditional computer applications to emerging web-based and mobile technologies. Design, development, and implementation of decision support systems for construction management applications.

Prerequisite(s): CE 131 or instructor consent.

Grading: Letter Graded

CE 240 - Advanced Soil Mechanics

3 unit(s)

Advanced study of classical and modern soil mechanics theories, including: consolidation, stress and deformation, shear strength. In-depth discussion of stress paths, flow nets and stress variants.

Prerequisite(s): CE 140 (or equivalent).

Grading: Letter Graded

CE 243 - Advanced Foundation Design

3 unit(s)

Advanced analysis of foundation design for atypical soil conditions. Seismic design of foundations. Laterally loaded foundations. Structural design of shallow foundations.

Prerequisite(s): CE 141 (or equivalent).

Grading: Letter Graded

CE 245 - Geotechnical/Structural Seminar

3 unit(s)

Meetings for the presentation and discussion of special topics and case histories of significant engineering projects by the faculty, guest lecturers and graduate students. Topics will vary each semester. May be repeated for credit when content changes.

Prerequisite(s): CE 140 (or equivalent).

Grading: Letter Graded

CE 246 - Geotechnical Earthquake Engineering

3 unit(s)

Wave propagation in soils, seismology, fundamentals of dynamic soil behavior, seismic hazard analysis, site effects, liquefaction, and seismic design.

Prerequisite(s): CE 140 (or equivalent).
Grading: Letter Graded

Sustainability Related - SDG 1: No Poverty

CE 247 - Earth Retention and Stability

3 unit(s)

Design of classic retaining walls using lateral earth pressure theory; Slope stability of earthen embankments, cut slopes and natural slopes; Design of modern earth-retention systems, including soil nails, mechanically-stabilized earth walls, soil anchors, etc.

Prerequisite(s): CE 140 or instructor consent
Grading: Letter Graded

CE 248 - Forensic Engineering and Failure Analysis

3 unit(s)

Analysis of civil engineering failures. Investigation into causes of failure, implications of failure and lessons learned from failure. Legal obligations and responsibilities of ethical engineers.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate Standing.
Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CE 250 - Modeling in Water Resources Engineering

3 unit(s)

Various modeling techniques for optimal planning and operation of water resources systems, which involve many random variables.

Prerequisite(s): Instructor consent.
Grading: Letter Graded

CE 251 - Hydraulics of Open Channels

3 unit(s)

Conveyance curves, the varied flow equation, specific energy, channel transitions, waves, routing of floods and super-critical flow.

Prerequisite(s): ME 111; MATH 33A or instructor consent.
Grading: Letter Graded

CE 252 - Advanced Hydrology

3 unit(s)

Advanced topics in hydrograph analysis, flood routing, statistical methods and groundwater flow.

Prerequisite(s): CE 150 and CE 152.

Grading: Letter Graded

Sustainability Related - SDG 6: Clean Water and Sanitation

CE 254 - Integrated Water Resources Management

3 unit(s)

Integrated Approaches to Water Resources Management. Topics include: emerging water issues and challenges, surface water and groundwater management, roles of water agencies, water allocation law, water use conflicts, and other related topics.

Prerequisite(s): CE 140 and CE 150, or instructor's consent.

Grading: Letter Graded

CE 255 - Sediment Transport

3 unit(s)

Introduction to sediment transport; concepts of bedload, suspended load, bed formation, stable channels and regime theory; environmental issues.

Prerequisite(s): CE 150.

Grading: Letter Graded

Sustainability Related - SDG 14: Life Below Water

CE 256 - Sustainable Water Resources Engineering

3 unit(s)

Low impact development practices for sustainable stormwater management, designing sustainable water infrastructure systems. Topics include: low impact development practices, rain water harvesting, green roofs, permeable concrete pavements, water conservation, urban water demand, and other related topics.

Prerequisite(s): CE 150 or instructor's consent.

Grading: Letter Graded

CE 260 - Matrix Analysis of Structures

3 unit(s)

Linear static and dynamic analysis of structures by matrix methods, including sidesway of frames and multistory buildings. Introduction to finite element analysis of structural systems. Discussion of computer-aided design of structures.

Prerequisite(s): CE 160 (or equivalent).

Grading: Letter Graded

CE 261 - Advanced Structural Concrete Design

3 unit(s)

Design of beams, columns, slabs, walls and connections according to provisions of the American Concrete

Institute. Advanced topics in compression elements, shear torsion and development. Elements of bridge and building systems.

Prerequisite(s): CE 160 and CE 162 (or equivalent).

Grading: Letter Graded

CE 264 - Prestressed Concrete Design

3 unit(s)

Basic concepts and history; pretensioned and post-tensioned systems; prestress losses; cracking and ultimate moments; design of simple spans, continuous spans and slabs; composite beams; tanks.

Prerequisite(s): CE 160 and CE 162 (or equivalent).

Grading: Letter Graded

CE 265 - Advanced Seismic Design

3 unit(s)

Design of frames, shear walls and other building systems to resist earthquake accelerations. Applications of dynamic analysis. Introduction to performance-based engineering.

Corequisite(s): CE 212 or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 1: No Poverty

CE 267 - Advanced Steel Design

3 unit(s)

LRFD (Load Resistant Design) of steel structures, including buildings and bridges. Detailing of steel frames for seismic resistance. Structural details of connections.

Prerequisite(s): CE 163 or instructor consent.

Grading: Letter Graded

CE 269 - Advanced Topics in Structural Design

3 unit(s)

Concepts in reinforced masonry, seismic isolation, structural retrofitting, computer aided design and modern construction materials. Topics to be specified at beginning of semester. May be repeated for credit when content changes.

Grading: Letter Graded

CE 270 - Environmental Engineering Process Kinetics

3 unit(s)

Process kinetics in drinking water and wastewater treatment.

Prerequisite(s): CE 170

Grading: Letter Graded

CE 271 - Physical/Chemical Processes in Environmental Pollution Control

3 unit(s)

Theory, analysis and engineering design of physical and chemical systems in environmental pollution control. Topics include mechanisms involved in physical/chemical destruction of pollutants, clarification, softening, coagulation and others.

Prerequisite(s): CE 170 or instructor consent.

Grading: Letter Graded

CE 272 - Biological Processes in Environmental Pollution Control

3 unit(s)

Theory, analysis and engineering design of biological systems in environmental pollution control. Topics include mechanism of biological destruction of pollutants, aerobic and anaerobic processes, nutrient removals and others.

Prerequisite(s): CE 170 or instructor consent.

Grading: Letter Graded

CE 273 - Water Treatment and Plant Design

3 unit(s)

Studies in the theory, design and operation of water treatment facilities. Water quality standards and water quality control.

Prerequisite(s): CE 170 or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 6: Clean Water and Sanitation

CE 274 - Wastewater Treatment and Plant Design

3 unit(s)

Studies in the theory, design and operation of traditional primary and secondary sewage treatment facilities. Review of water pollution control laws and regulations.

Prerequisite(s): CE 170 or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 6: Clean Water and Sanitation

CE 275 - Industrial and Hazardous Waste Management and Treatment

3 unit(s)

Study of industrial and hazardous wastes. Sources, characteristics, management, treatment and disposal. Effects on the environment.

Prerequisite(s): CE 170 or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

CE 276 - Management and Reuse of Process Solids

3 unit(s)

Solids production at water and wastewater treatment plants, types, characteristics, processing, management and reuse including biofuel production from wastewater biosolids, and disposal of residual matter.

Prerequisite(s): CE 271 and CE 272.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

CE 277 - Environmental Sustainability

3 unit(s)

Studies of various engineering designs and practices for sustainable environment.

Prerequisite(s): CE 170 or Instructor Consent

Grading: Letter Graded

Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

CE 279 - Special Topics in Environmental Engineering

3 unit(s)

Current problems in environmental engineering. Course is repeatable for credit with instructor consent.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

CE 285 - Graduate Curricular Practical Training

1 unit(s)

Fieldwork for Civil Engineering graduate students. A report is required at the end of the semester addressing goals set at the start of the assignment.

Course is repeatable once for credit.

Prerequisite(s): Graduate standing, classified, in good standing, and completed at least one semester of master's level work at SJSU. Allowed Declared Majors: Civil Engineering. Or instructor consent.

Grading: Credit/No Credit

CE 297 - Special Topics in Civil Engineering

1-4 unit(s)

Special topics to augment regularly-scheduled graduate courses.

Grading: Letter Graded

CE 298 - Special Problems

1-6 unit(s)

Advanced individual research and projects.

Prerequisite(s): Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

CE 299 - Master's Thesis

1-6 unit(s)

Prerequisite(s): Advancement to candidacy for the MS degree. Not available to Open University Students

Grading: Credit/No Credit/RP

Communication Studies

COMM 10 - Communication and Human Relationships

3 unit(s)

Examines the role of communication in developing/maintaining human relationships. Discussion focuses on relational communication processes as they occur in various settings, such as the intercultural, the family, the intimate, the organizational, the public, and among/within genders.

Satisfies D: Social Sciences.

Grading: Letter Graded

COMM 20 - Public Speaking

3 unit(s)

Principles of rhetoric applied to oral communication; selecting, analyzing, adapting, organizing and delivering ideas effectively.

Satisfies A1: Oral Communication.

Grading: Letter Graded

COMM 20EL - Public Speaking for English Language Learners

3 unit(s)

Principles of rhetoric applied to oral communication; selecting, analyzing, adapting, organizing and delivering ideas effectively. Emphasis on intercultural communication.

Satisfies A1: Oral Communication.

Prerequisite(s): Intended for English language learners/nonnative speakers.

Grading: Letter Graded

COMM 21 - Performing Culture and Society

3 unit(s)

Live performance is used as a method for exploring human behavior as it occurs within contemporary cultures and societies. Performance assignments will draw from among the following: performance of texts, street performance, personal narrative, oral history, everyday life, and social justice.

Satisfies D: Social Sciences.

Grading: Letter Graded.

COMM 40 - Argumentation and Advocacy

3 unit(s)

Principles of inquiry and advocacy in public discussion and necessary basic skills for informed participation in discussion and debate.

Satisfies A1: Oral Communication.

Grading: Letter Graded

COMM 41 - Critical Decision Making

3 unit(s)

Critical reasoning and problem solving in group discussion. Examination of the relationship between critical decision-making and group communication. Practice in group problem solving as a means for developing critical thinking skills.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded

COMM 45 - Media and Culture

3 unit(s)

Application of critical thinking, writing, and oral communication skills in the analysis of media representations of culture. Practice in reasoning, advocating ideas, researching and evaluating arguments, developing well supported factual conclusions, and engaging in meaningful dialogue on diverse issues.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded

COMM 74 - Fundamentals of Intercultural Communication

3 unit(s)

Emphasis on direct experience and the development of skill in intercultural communication. Provides opportunity for discussion of variations within and among cultures. Encourages students to examine their own cultural heritage.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Note(s): All courses with a 'Q' suffix are designated as First Year Experience courses.

COMM 74Q - Fundamentals of Intercultural Communication

3 unit(s)

Emphasis on direct experience and the development of skill in intercultural communication. Provides opportunity for discussion of variations within and among cultures. Encourages students to examine their own cultural heritage.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Note(s): All courses with a 'Q' suffix are designated as First Year Experience courses.

COMM 80 - Communication Workshop

1 unit(s)

Designed to enhance students' personal and professional communication and public speaking skills. Flexible student-directed course that requires completion of instructional modules and workshops.

3 hours activity.

Course may be repeated for credit.

Grading: Credit/No Credit

COMM 91A - Activity Project in Forensics: Intramural Debate

1 unit(s)

Supervised activity in the forensics program. A: Intramural competition in debate. A total of 3 units applicable to the major may be repeated.

Course may be repeated for credit for up to 3 units.

Grading: Credit/No Credit

COMM 91J - Judge Training

1 unit(s)

Community service course designed to train students to judge high school speech and debate tournaments. Students are taught the rules and given criteria for judging each event in oral interpretation of prose poetry, and drama; platform speaking; debate; and Student Congress. Students are required to write cogent ballots that help competitors.

Grading: Credit/No Credit

COMM 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 12 units.

Grading: Mixed Grading

COMM 100W - Writing Workshop: Writing for Influence

3 unit(s)

Current conventions and forms of exposition, argument and persuasion. Writing for the general and specialized audience from the thesis statement approach.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Allowed Declared Majors: Communication Studies, Communication Disorders, Speech Pathology, Business.

Grading: Letter Graded.

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

COMM 101C - Junior Seminar: Theorizing Communication

4 unit(s)

Overview of the communication studies discipline based on survey of historical, theoretical, and practical responses to communication problems arising from changing social contexts. Discussion of communication literature, resources, and modes of inquiry.

Lecture 3 hours/Activity 2 hours

Prerequisite(s): Completion of GE oral communication and declared Communication Studies major.

Grading: Letter Graded.

COMM 105P - Communication, Self, and Society

4 unit(s)

Examines the role of communication in the development of the self and the creation of social worlds. Students develop an appreciation for and practical skills in negotiating self-society tensions inherent in a diverse, global, and mediated environment.

Prerequisite(s): Completion of A1 Core GE requirement or instructor consent.

Grading: Letter Graded

COMM 110F - Interpersonal Communication

4 unit(s)

Integration of theory and practice to facilitate student understanding and skills in evaluating and participating in interpersonal relationships across contexts and the lifespan.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 111P - Interviewing

4 unit(s)

Setting and achieving communicative goals essential in preparing for and conducting interviews. Special attention on developing effective questions and responses. Participation in a variety of interviews, including employment, appraisal, journalistic, research, survey, health care, and persuasive.

Prerequisite(s): Completion of GE Area A1 (Oral Communication).

Grading: Letter Graded

COMM 112P - Communicating at Work

4 unit(s)

Application of best practices from communication theory and research to creating and maintaining effective interpersonal relationships across global workplace contexts. Addresses topics such as confronting harassment, promoting cultural diversity, expressing dissent, proposing ideas, and managing digital work environments.

Prerequisite(s): Completion of GE Area A1 Oral Communication.

Grading: Letter Graded

COMM 113P - Games in Everyday Life

4 unit(s)

Games serve key communicative functions in promoting fun, play, collaboration, competition, and learning. Explores games and the use of game elements across communication contexts, including interpersonal, small group, organizational/business, health, and education.

Prerequisite(s): Completion of GE Area A1.

Grading: Letter Graded

COMM 114P - Business and Professional Speaking

4 unit(s)

Application of current theory and research to develop communications skills within larger global and ethical issues across a range of professional and workplace contexts, including interviews, oral reports, persuasive presentations, group meetings, and mediated public speaking.

Prerequisite(s): Completion of A1 Core GE requirement or instructor consent.

Grading: Letter Graded

COMM 115P - Communication and Conflict

4 unit(s)

Focus on theories of communication as related to interpersonal and group conflict. Development of communication skills in conflict management, and applied activity in interpersonal conflict management.

Prerequisite(s): Completion of A1 Core GE requirement or instructor consent.

Grading: Letter Graded

COMM 116P - Mediation: Theory and Practice

4 unit(s)

Theoretical background and communication skills training in Mediation Practice. Basic 40 hours of training includes readings, analysis, and role plays as well as some observation.

Prerequisite(s): Completion of A1 Core GE requirement or instructor consent.

Grading: Letter Graded

COMM 117F - Understanding Play & Games

4 unit(s)

Examines play and games as fundamental social experiences central to developing cultural norms and structures. Explores topics such as gameplay, identity, narrative, and serious games. Special attention to communication theories that provide insight into the nature of play and games.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

COMM 119I - Researching Games

4 unit(s)

Introduction to research methods commonly used to study games and human communication, such as observation, textual analysis, interviewing, and surveys. Students develop and apply analytical skills and ethical practices for understanding, conducting, and evaluating research in games and communication.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

COMM 120P - Persuasive & Presentation Skills

4 unit(s)

Applies theories, concepts, and research associated with persuasive communication to develop effective presentation skills. Considers broader issues of persuasion and influence at societal and global levels, examining how those issues provide a context for everyday persuasion.

Prerequisite(s): Completion of A1 Core GE requirement or instructor consent.

Grading: Letter Graded

COMM 121P - Performance as Practice

4 unit(s)

Exploration of performance as a site of communication and embodied practice. Will examine the many ways in which performance exists and operates in our culture with a focus on adaptation of literature, personal

narrative, and everyday rituals.

Prerequisite(s): Completion of A1 Core GE requirement or instructor consent.

Grading: Letter Graded

COMM 122F - Performance Studies

4 unit(s)

Examines the constitutive effects of performance, broadly understood, across a variety of communication contexts. Special attention paid to the performative elements of culture, everyday life, ritual, political protest, social belonging, and identity.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 123I - Performance of Ethnodrama

4 unit(s)

Explores how live performance can be used to create, interpret, and present arts-based scholarship. Students will read ethnodramatic texts and engage in original research, script writing, rehearsal, and performance. Emphasis is on cross-cultural performances.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 124P - Communication Training and Development

4 unit(s)

Principles of designing and delivering ethical and socially responsible communication training programs including needs assessment, setting objectives, program design, selection and development of training materials, presentation skills, facilitation skills, and training evaluation.

Prerequisite(s): Completion of A1 Core GE requirement or instructor consent.

Grading: Letter Graded

COMM 125P - Ensemble Performance

4 unit(s)

Students collaborate to conceive, write, rehearse, and produce an ensemble project culminating in a public performance. Readings and written work focus on performance as a community-building process as well as dramaturgical research for the production.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Completion of A1 of Core GE requirement or instructor consent.

Grading: Letter Graded

COMM 126F - Race and Performance

4 unit(s)

Examination of the various ways in which racial identities are performed across a variety of communication

contexts, including daily life, popular entertainment, ritualized behavior, cultural practice, and the public sphere.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 130F - Activism, Action, and Resistance

4 unit(s)

Examines national and global historical and contemporary social movements in the context of communication practices ranging from street protests to use of media and the internet. Resistance is explored using a variety of theoretical and cultural perspectives.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

COMM 131P - New Media/You Media

4 unit(s)

Practical application of current communication theories and research to facilitate skill development in the use and critique of new media tools, such as social networking sites, blogs, microblogs, wikis, personal webpages, video sharing sites, and similar digital communication venues.

Prerequisite(s): Completion of GE Area A1.

Grading: Letter Graded

COMM 132F - Dis/Ability Communication

4 unit(s)

Theoretical foundations in dis/ability communication facilitate student understanding of the social construct of disabilities and provide means to deconstruct communication surrounding difference.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

COMM 133F - Ethical Problems in Communication

4 unit(s)

Examines current and historical theoretical approaches to ethical problems across communication contexts, including workplace, interpersonal, and mediated settings. Explores the role of cultural and societal practices in ethical communication.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

COMM 140P - Argumentation and Debate

4 unit(s)

Principles of argumentation including analysis of propositions, issues, evidence and reasoning. Training and experience in debate forms.

Prerequisite(s): Completion of A1 of Core GE requirement or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

COMM 141P - Small Group Communication

4 unit(s)

An applied approach to small groups and teamwork that links theory and practice across a variety of contexts. Emphasis on the relationships between group communication and larger cultural issues, such as diversity and democracy.

Prerequisite(s): Completion of GE Area A1 (Oral Communication).

Grading: Letter Graded

COMM 144F - Organizational Communication

4 unit(s)

Application of organizational communication theories and concepts to communication processes and functions in organizational life. Examines topics such as ethics, leadership, teams, culture, networks, power, diversity, identity, and assessment of communication practices.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 145I - Rhetorical and Cultural Criticism

4 unit(s)

Survey of leading theorists, critics, and movements in the area of rhetoric and cultural studies. Examines interpretations of speech and discourse as an approach to understanding both real life issues and advanced work in communication studies.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 146F - Communication and the Environment

4 unit(s)

Examination of communication in environmental issues, especially conflicting values and modes of discourse that assume different meanings of human-nature relationship. Emphasis on environmentalism as a popular movement, rhetoric of radical ecology, and the technical discourse of environmental policy administration.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 146F. Communication Studies is responsible for scheduling.
Sustainability Focused - SDG 4: Quality Education

COMM 147P - Argumentation and Persuasion in Courts of Law

4 unit(s)

Principles of legal argumentation, cross-examination, jury selection and strategy. Selected trial transcripts studied to explore differing uses of the trial forum.

Prerequisite(s): Completion of GE Area A1 (Oral Communication).

Grading: Letter Graded

COMM 149F - Rhetoric and Public Life

4 unit(s)

Knowledge of rhetorical theory and practice as they relate to public life, democratic governance, and social conflict and consensus from the classical era to contemporary times.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 150I - Inquiry in Organizational Communication

4 unit(s)

Introduction to research methods commonly used in studies of organizational communication, such as focus group, interviewing, survey, ethnography, appreciative inquiry, and textual analysis.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 151I - New Media/New Methods

4 unit(s)

Examines the internet and related digital communication systems as both a site of and a tool for communication research. Special attention to legal and ethical concerns associated with communication research in digital environments.

Prerequisite(s): Upper division standing

Grading: Letter Graded

COMM 152I - Communication in World Cultures

4 unit(s)

Origins of human communication studies in early societies, including those of China, Egypt, Greece, India, Mesopotamia, and Rome. Special attention to the cultural origins of classic texts and significant patterns of communication, which continue to inform our contemporary experiences.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 153I - Discourse Analysis

4 unit(s)

Introduction to discourse analytic approaches to studying situated communication practices, including research design, data collection, data analysis, and ethical issues pertaining to conducting discourse analysis.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 154I - Ethnography for Communication Studies

4 unit(s)

Introduction to ethnography from a communication studies perspective, i.e. ethnographic approaches to studying situated communication practices in particular cultural milieus, such as ethnography of communication, critical ethnography, digital ethnography, autoethnography, and/or other types relevant to communication studies.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 155I - Quantitative Communication Inquiry

4 unit(s)

Quantitative social scientific approaches to communication facilitate students' understanding of the philosophical foundations of quantitative methods and skills in hypothesis testing, research design, data collection, analysis, and interpretation. Methods to be covered include experimental design, survey research, and content analysis.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 156I - Observation and Interviewing Methods

4 unit(s)

Observation and interviewing methods, or qualitative approaches to communication, facilitate student understanding of the philosophical foundations of developing research questions, research design, data collection, analysis and interpretation. Methods covered include ethnography and participant observation, interviewing, focus groups, and action research.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 157SL - Community Action/Community Service

3 unit(s)

A campus-wide service learning program with opportunities for direct involvement with local community services, both off campus and on campus. Weekly seminars held on campus or at the field site, plus four to six hours of community service work per week at the field site.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with EDUC 157SL / ENGR 157SL / HA 157SL / SCI 157SL. Communication Studies is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

COMM 160F - Language, Meaning, and Culture

4 unit(s)

Course addresses the question of how language, symbols, and society work together. Students will learn about the nature of language and how language and symbols shape individual and collective actions.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 161F - Communication and Culture

4 unit(s)

Human communication is explored as a mechanism of control and as a vehicle of cultural change. Applies theoretical principles of communication to social issues and communication settings in different cultures.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 164F - Communication and Global Organizations

4 unit(s)

Examines the relationships among culture, communication, technology, and ways of organizing in various types of global organizations (e.g. nongovernmental organizations, not-for-profits, corporations). Explores the unique communicative processes and ethical issues that arise in international organizing.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 17: Partnerships for the Goals

COMM 165P - Communication and Organizational Philanthropy

4 unit(s)

A broad look at the history of philanthropy, fundraising, legal and compliance issues, messaging and marketing, recruitment and managing of volunteers, technology, evaluating non-profits, and philanthropy as a career choice.

Prerequisite(s): Completion of Area A1 of core GE or instructor consent.

Grading: Letter Graded

COMM 168A - Climate Action and Leadership I

6 unit(s)

Scientific and social scientific approaches to the process and effects of global climate change: Climate changes in the Earth's past, interactions between climate and life, anthropogenic climate change, socioeconomic contexts of environmental effects, cultural influences on climate change mitigation strategies.

Satisfies SJSU Studies S+V: Self, Society & Equality in the U.S. + Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENVS 168A / METR 168A. Communication Studies is responsible for scheduling.
Sustainability Focused - SDG 13: Climate Action

COMM 168B - Climate Action and Leadership II

3 unit(s)

Scientific and social scientific approaches to the process and effects of global climate change: Climate changes in the Earth's past, interactions between climate and life, anthropogenic climate change, socioeconomic contexts of environmental effects, cultural influences on climate change mitigation strategies.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of COMM 168A / ENVS 168A / METR 168A with a C- or better. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENVS 168B / METR 168B. Communication Studies is responsible for scheduling.
Sustainability Focused - SDG 13: Climate Action

COMM 169I - The Media: Response and Criticism

4 unit(s)

Examination of media as a locus of meaning making. Critical analysis of communication practices and content in a variety of venues, such as television, film, radio, social networking, and other sites of web-based communication.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 170F - Persuasion

4 unit(s)

Explores theories, concepts, and research associated with persuasive communication. Considers broader issues of persuasion and ethics at societal and global levels, examining how those issues provide a context for the kinds of persuasion encountered in everyday life.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 172F - Multicultural Communication in the United States

4 unit(s)

Analysis of the communication process between and among people in a culturally diverse domestic population (United States). Topics cover speech communication principles, conflict management, language, script analysis, attitudes and values. Includes both theory and activity-based exercises.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 173F - Intercultural Communication and Global Understanding

4 unit(s)

Analysis of communication among persons from different U.S. and world cultures. Experiences and research in intercultural communication. The influence of varying values, norms, belief structures, and roles. Prejudice, ethnocentrism, nationalism, and racism in communication.

Prerequisite(s): Upper division standing

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

COMM 174 - Intercultural Comm and Structural Inequalities

3 unit(s)

Analysis of intercultural communication in the U.S. as it relates to social inequalities, power differences, and diversity. Examines identities and interactions among people of different racial/ethnic backgrounds. Investigates influence of sociocultural forces on intercultural communication encounters and relationships.

Satisfies SJSU Studies Area S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

COMM 175F - Nonverbal Communication

4 unit(s)

A look at differences between and the interdependency of verbal and nonverbal messages. Students will study the role of nonverbal communication in everyday life.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

COMM 176P - Communication and Gender

4 unit(s)

An analysis of issues and problems related to communication and gender. The course considers theoretical and practical perspectives across gendered interactions in a variety of situations and cultures.

Prerequisite(s): Completion of A1 of Core GE requirement or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 5: Gender Equality

COMM 178F - Critical Intercultural Communication Studies

4 unit(s)

An overview of the critical paradigmatic perspective in intercultural communication. Such a perspective proffers an exploration of power dimensions and macro structures that frame and shape micro-intercultural communication encounters, episodes, and contexts.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 179 - Global Media and Resistance

3 unit(s)

Study of communication issues facing global resistance movements, particularly the role of new technology and social media in public dissent. Covers the application of social movements and resistance theories and concepts.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

COMM 180 - Individual Studies

1-3 unit(s)

Supervised study in specific fields of speech not covered by offered courses.

Prerequisite(s): Department chair consent.

Grading: Credit/No Credit

COMM 181F - New Media/New World

4 unit(s)

Explores the impact of the internet, mobile devices, and other information and communication technologies on social interaction, self-representation, business, politics, and cultural production. Covers the application of mediated communication theories and concepts.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

COMM 182P - Communication in the Classroom

4 unit(s)

Analysis of the classroom as a communication system. Application of communication principles to the

facilitation of educational dialogue.

Prerequisite(s): Completion of GE Area A1 (Oral Communication).

Grading: Letter Graded

COMM 184 - Directed Reading

1-2 unit(s)

A total of 3 units may be repeated.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Upper division or graduate standing and department chair approval.

Grading: Credit/No Credit

COMM 185F - Health Communication

4 unit(s)

Theories of verbal and nonverbal communication, organizational communication, interviewing, intercultural understanding, and critical approaches to communication through examination of health narratives, competencies needed by health care professionals, patients and caregivers, and the complexities of healthcare politics. Communication problems encountered in healthcare and theory-driven strategies for improving and coping with these problems.

Prerequisite(s): Upper division standing (60 units completed) or instructor consent.

Grading: Letter Graded

COMM 186I - Research Methods in Health Communication

4 unit(s)

Comprehensive overview of research methods in health communication as a discipline and professional practice including social scientific, observational, narrative, meta-analytic, rhetorical, and critical methods. Explorations of the unique ethical responsibilities of health communication researchers as well as various processes of research design and data collection, practices of analysis, and tools for academic and professional writing.

Prerequisite(s): Upper division standing (60 units completed) or instructor consent.

Grading: Letter Graded.

COMM 187P - Communication and Community Wellness

4 unit(s)

Introduction to the various layers of communication (family, media, community, and institutional) that inhibit and foster individual health and well-being. Exposure to literature in the area of community health and wellness, including theoretical, methodological, and policy debates. Students consider and develop their own community-based solutions to public health challenges.

Prerequisite(s): Completion of GE Area 1 (oral communication).

Grading: Letter Graded

COMM 190 - Activity Projects in Speech

1-6 unit(s)

Supervised activity in communication studies. Application of principles and theories of communication in business, community and professional settings.

Prerequisite(s): Upper division or graduate standing and department chair approval.

Grading: Credit/No Credit

COMM 190I - Activity Proj in Speech International

1-6 unit(s)

Supervised activity in communication studies for international students. Application of principles and theory of communication in business, community, and professional settings with specific attention to the needs of visiting international students.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division or graduate standing, or department chair approval.

Grading: Letter Graded

COMM 191A - Activity Projects in Forensics

1-3 unit(s)

Supervised activity in the forensics program. A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

COMM 191B - Activity Projects in Forensics

1-3 unit(s)

Supervised activity in the forensics program. A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

COMM 191C - Activity Projects in Forensics

1-3 unit(s)

Supervised activity in the forensics program. A: Competition in debate. B: Individual events-Platform

Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

COMM 191J - Activity Projects in Forensics

1 unit(s)

Supervised activity in the forensics program. A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

COMM 191M - Activity Projects in Forensics

1 unit(s)

Supervised activity in the forensics program. A: Competition in debate. B: Individual events-Platform Speaking including persuasive speaking and communication analysis. C: Individual events oral interpretation (field trips required). J: Preparation for and judging competitive speaking activities (debates, individual events in college and high school forensics tournaments, community-sponsored speech contests). M: Research and oral presentation of appellate court arguments from simulated cases before law judges or in intercollegiate tournaments. A total of 6 units applicable to the major may be repeated.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

COMM 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

COMM 193 - Activity Projects in Intercultural/International Communication

1-3 unit(s)

Supervised activity in communication studies for students participating in immersive experiences in different cultural environments. Students demonstrate proficiency in evaluating and applying core communication concepts relevant to the experience of living, studying, and/or working in a different cultural environment.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

COMM 195 - Special Topics in Communication Studies

1-3 unit(s)

Investigation of topics not included in regular departmental offerings. Focus varies each semester and is announced in the schedule of classes. Course is repeatable with department chair consent no more than 3 times. Course is repeatable with department chair consent no more than 3 times.

Course may be repeated for credit for up to 9 units.

Grading: Letter Graded

COMM 198 - Applied Activity in Communication

1-2 unit(s)

Practical application of communication theory to real world settings to provide meaningful applied capstone experiences. Students demonstrate proficiency in the critical application of core communication requirements to speech acts and contexts outside the traditional classroom.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): COMM 101 or COMM 101C; upper division standing.

Grading: Credit/No Credit

COMM 199C - Senior Seminar: Synthesis & Application

4 unit(s)

Capstone overview of the contemporary discipline of communication studies that builds on theory, concepts, and skills learned in COMM 101C and upper-division major courses. Synthesis and application of communication literature, resources, and modes of inquiry.

Prerequisite(s): COMM 101C; upper division standing

Grading: Letter Graded.

COMM 200C - Graduate Study in Communication

4 unit(s)

History of and current research in the communication field; theory-building and metatheoretical issues; reviewing and critiquing studies; preparing research questions/hypotheses and prospectus.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Admission to the Communication Studies, MA program; Graduate standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

COMM 201C - Methods and Methodologies of Communication Studies

4 unit(s)

Introduction to a representative number of research methods and methodologies pertinent to the field of communication studies, encompassing quantitative, qualitative, and rhetorical methods reflecting social scientific, interpretive, rhetorical, and/or critical approaches to research.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

COMM 210F - Interpersonal Communication

4 unit(s)

Examination of the role of communication in creating and maintaining social relationships. Draws on interpretive, critical, and/or quantitative theories and methods for investigating relationships in different cultural contexts and across the life span.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

COMM 221I - Performing Narratives

4 unit(s)

Practice in the application of theories and methods for performing narratives, broadly construed. Students will practice creating, directing, and performing work adapted from literary texts, ethnographic interviews, social justice issues, and/or lived experience. Required of graduate students who wish to do thesis performances.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

Cross-listed with TA 221I. Communication Studies is responsible for scheduling.

COMM 222F - Performance and Culture

4 unit(s)

Explores cultural identity as constructed, contested, and displayed through acts of performance such as theatre, dance, storytelling, performance art, film, literature, and everyday behavior. Focuses on performance as a site of cultural manifestation and transformation.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

COMM 244F - Organizational Communication

4 unit(s)

Examination of internal communication processes in large organizations. Emphasis on social construction processes in organizations, the communicative constitution of organizations, communication networks, communication relationships, and the understanding of different communication processes and structures in organizations. Experience in gathering and analyzing data to monitor and assess organizational communication.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

Note(s): MBA recommended elective.

COMM 245I - Communication Criticism

4 unit(s)

Theories guiding critical evaluation of messages communicated in a variety of media, from oral to digital. Emphasis on the historical, political, and social contexts where such messages are designed, transmitted, interpreted, and used.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

COMM 249F - Rhetorical Theory

4 unit(s)

Study of rhetorical theory, its foundations, insights, and implications for social practice.

Prerequisite(s): Graduate standing, or instructor consent.

Grading: Letter Graded

COMM 250F - Communication Theory: Critical and Interpretive

4 unit(s)

Major theorists and theories of communication in the rhetorical, historical, critical, empirical, and philosophical traditions.

Prerequisite(s): Graduate standing.

Pre/Corequisite(s): COMM 200C.

Grading: Letter Graded

COMM 255F - Seminar in Communication Theory

4 unit(s)

Review and evaluation of communication theories and research, past and present. Examination of methods of theory construction and scholarly inquiry. Experience in applying theory to designing and conducting communication research.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

COMM 265 - Seminar in Crisis Communication

3 unit(s)

Role of public communication in crisis situations; types of crisis; pre- and post-crisis planning; crisis communication management; risk communication; crisis narratives and rhetoric; ethical obligations of crisis communication; dealing with media; image restoration. Independent research project required.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

COMM 274F - Intercultural Communication

4 unit(s)

Advanced study of the theories, perspectives, and processes that affect intercultural communication among diverse cultural groups in the world.

Prerequisite(s): Graduate standing.

Pre/Corequisite(s): COMM 200C.

Grading: Letter Graded

COMM 280 - Independent Study

1-4 unit(s)

Supervised and specialized study in specific fields of communication not covered by offered courses or that extend beyond what can be covered in an offered course.

Course is repeatable for up to 4 units.

Prerequisite(s): Department Chair consent

Grading: Credit/No Credit/Incomplete.

COMM 282P - Communication Pedagogy

4 unit(s)

Investigation and analysis of the intersections of communication and instruction, including communication education, instructional communication, and critical communication pedagogy.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

COMM 285A - Teaching Associate Practicum I

2 unit(s)

Instruction and supervised experience in teaching university level courses in Communication Studies. Topics include curriculum design, instructional objectives, and activities and assessment.

Prerequisite(s): Appointment as Graduate Teaching Associate or instructor consent

Grading: Credit/No Credit

COMM 285B - Teaching Associate Practicum II

1-3 unit(s)

Instruction and supervised experience in teaching university level courses in Communication Studies. In

addition to advanced discussion of topics from 285A, topics will include theories of teaching and learning, identity, culture, and power.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Appointment as Graduate Teaching Associate and COMM 285A, or instructor consent
Grading: Credit/No Credit

COMM 290 - Thesis and project supervision

1 unit(s)

Continued work on thesis or project.

Prerequisite(s): Outstanding RP grade in a preceding semester on a thesis or project.
Grading: Mandatory Credit/No Credit/RP

COMM 291 - Communication Studies Graduate Internship Program

1-4 unit(s)

Practical application of communication theory and research methods to real world settings to provide applied capstone experiences. Students demonstrate proficiency in the critical application of core communication requirements to speech acts in engaged and applied settings outside the traditional classroom.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Graduate Standing, Permission of Director.
Grading: Credit/No Credit

COMM 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

COMM 295I - Special Topics in Communication Inquiry

4 unit(s)

Advanced application of communication research methods with emphasis on current literature. The topic will vary from term to term.

Course may be repeated with instructor and advisor consent.

Grading: Letter Graded

COMM 297C - Advanced Writing Workshop

4 unit(s)

Advanced course in writing and presentation skills. Course learning goals will focus on grammar, syntax, and argumentation in written work, as well as oral performance.

Satisfies Graduation Writing Assessment Requirement (GWAR).

Pre/Corequisite(s): COMM 200C.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

COMM 298 - Master's Project or Comprehensive Exam

1-4 unit(s)

Supervised project work in the field of Communication Studies or individual preparation for the comprehensive exam.

Prerequisite(s): Advancement to candidacy for the Master's degree, completion of core requirements, and instructor consent.

Grading: Mandatory Credit/No Credit/RP

COMM 299 - Master's Thesis

1-6 unit(s)

Supervised thesis work in the field of Communication Studies.

Prerequisite(s): Advancement to candidacy for the master's degree, completion of core requirements and instructor consent.

Grading: Mandatory Credit/No Credit/RP

Comparative Literature

COLT 122 - Topics in Comparative World Literature

4 unit(s)

An exemplary theme as treated in various literatures from different national sites, e.g., war, love, freedom, colonialism, environmental disaster.

Grading: Letter Graded

Cross-listed with ENGL 122 / FORL 122 / HUM 122. English and Comparative Literature is responsible for scheduling.

COLT 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad

and Away programs.

Grading: Mixed Grading

Computer Engineering

CMPE 30 - Programming Concepts and Methodology

3 unit(s)

Introduction to programming; overview of computer organization and introduction to software engineering. Topics include methodologies for program design, development, style, testing, and documentation; algorithms, control structures, functions, and elementary data structures.

Lecture 2 hours/lab 3 hours.

Corequisite(s): MATH 30 or MATH 30X or equivalent.

Grading: Letter Graded

CMPE 50 - Object-Oriented Concepts and Methodology

3 unit(s)

Application of object-oriented software engineering techniques to the design and development of larger programs; data abstraction, structures, classes and associated algorithms.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): CMPE 30 with a minimum grade of "C-". Computer Engineering and Software Engineering Majors only.

Grading: Letter Graded

CMPE 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CMPE 102 - Assembly Language Programming

3 unit(s)

Assembly programming; assembly-C interface; CPU and memory organization; addressing modes; arithmetic, logic and branch instructions; arrays, pointers, subroutines, stack and procedure calls; software interrupts; multiplication, division and floating point arithmetic.

Prerequisite(s): CMPE 50 or CS 46B (with grade of "C-" or better) Sophomore or upper division standing.

Allowed Declared Majors: Computer Engineering, Software Engineering.

Grading: Letter Graded

CMPE 110 - Electronics for Computing Systems

3 unit(s)

RC, RL and RLC circuit analysis, diodes and diode circuits, MOSFET and bipolar transistor I-V characteristics and circuits, CMOS logic circuits, CMOS-TTL interface, sensors and signal conditioning circuits using operational amplifiers, A/D and D/A converters, electromechanical device control.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): EE 97, EE 98, MATH 33LA or MATH 39 + MATH 33A, all with a grade of "C" or better.

Allowed Declared Majors: Computer Engineering and Software Engineering.

Grading: Letter Graded.

CMPE 120 - Computer Organization and Architecture

3 unit(s)

Introduction to computer organization and architecture, system buses, internal memory and external memory, input/output, central processing unit CPU, instruction sets, CPU structure and function, RISC, control unit.

Prerequisite(s): CMPE 50 or CS 46B (with a grade of "C-" or better). Computer Engineering and Software Engineering Majors Only.

Grading: Letter Graded

CMPE 124 - Digital Design I

3 unit(s)

Combinational and sequential logic theory and circuits. Emphasis on mixed logic and algorithmic state machines. Design projects using standard integrated circuit packages.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): EE 97 and EE 98 (both with C or better). Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 125 - Digital Design II

3 unit(s)

Digital system building blocks, data path and control units, system-level RTL design, Verilog HDL for design and verification, contemporary design flow and methodology, lab experiments using industry standard CAD tools and field programmable gate array (FPGA) devices.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): CMPE 124 (with grade of "C-" or better). Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 126 - Algorithms and Data Structure Design

3 unit(s)

Object-oriented data organization and representation as strings, arrays, stacks, queues, dequeues, lists, sets, trees, tables, and graphs. Sorting and searching and algorithm design and performance analysis.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): ENGR 10, CMPE 50, and MATH 42 or MATH 42X (all with a grade of "C-" or better).

Allowed Declared Majors: Computer Engineering or Software Engineering.

Grading: Letter Graded

CMPE 127 - Microprocessor Design I

3 unit(s)

Microprocessor architecture and assembly language. Design of peripheral blocks and their interfaces to the microprocessor. Design projects using standard integrated circuit packages.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): CMPE 124 with a grade of "C-" or better; Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 130 - Advanced Algorithm Design

3 unit(s)

Design and analysis of data structures and algorithms. Advanced tree structures, hashing, searching and sorting. Divide-and-conquer, greedy and dynamic programming algorithm design techniques.

Prerequisite(s): CMPE 126, and either ISE 130 or MATH 161A (with grades of "C-" or better). Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 131 - Software Engineering I

3 unit(s)

Why software engineering? What is software engineering? Software development lifecycle activities: project planning and management requirements analysis, requirement specification. Software design, software testing, verification, validation, and documentation. Software quality assurance and review techniques, software maintenance, team-based projects.

Prerequisite(s): CMPE major: CMPE 126 (C- or better); SE major: CS 46B (C- or better); other majors: CMPE 30, and MATH 32 or MATH 32H or MATH 32X (C- or better).

Grading: Letter Graded

CMPE 132 - Information Security

3 unit(s)

A study of computer and network security from centralized systems to distributed networks. Cryptology, vulnerabilities and controls. Firewalls, privacy enhanced e-mail, viruses and worms. Case studies will be

featured.

Prerequisite(s): CMPE 126 with a C- or better. Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 133 - Software Engineering II

3 unit(s)

Software Architecture, Software Technical Metrics, evaluating products, processes, and resources, improving predictions, products, processes, and resources. Advanced topics such as: Formal Methods, Software Reuse, Reengineering, Client/Server Software Engineering, Computer-Aided Software Engineering, Team-Based Projects.

Prerequisite(s): CMPE 131 with a grade of "C-" or better.

Grading: Letter Graded

CMPE 135 - Object-Oriented Analysis and Design

3 unit(s)

Feasibility analysis and system requirements determination, object-oriented design methodology, and information systems design using object-oriented modeling techniques. Emphasis on both theoretical and practical aspects of object-oriented systems analysis and design. Team-based design project.

Prerequisite(s): For SE Majors: CS 46B or for others CMPE 126. See SJSU Catalog for detail list of prerequisites

Grading: Letter Graded

Cross-listed with SE 135. Computer Engineering is responsible for scheduling.

CMPE 137 - Wireless Mobile Software Engineering

3 unit(s)

Mobility analysis, design principles, techniques, and methods for software systems on a variety of wireless and mobile Internet based computing and communication platforms, such as advanced pocket/tablet PCs, GPS, Bluetooth, Infrared, Wi-Fi, and RFID. Design multi-disciplined mobile project.

Prerequisite(s): CMPE 131. Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

Cross-listed with SE 137. Computer Engineering is responsible for scheduling.

CMPE 138 - Database Systems I

3 unit(s)

File organization and storage structure, database system architecture, entity relationship model, normalization techniques, SQL, relational algebra, storage organization, query processing, and concurrency control.

Prerequisite(s): CMPE 126 (with a grade of "C-" or better). Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 139 - Fundamentals of Data Mining

3 unit(s)

Introduction to data management and data mining, data preprocessing, OLAP and data warehousing, frequent pattern mining and association rules, clustering, classification, web mining, web search, recommender systems, social network analysis.

Prerequisite(s): CMPE 126 or CS 146 (with C- or better). Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

Cross-listed with SE 139. Computer Engineering is responsible for scheduling.

CMPE 140 - Computer Architecture and Design

3 unit(s)

Pipelining and timing issues in CPU data-paths. Principles of RISC-type CPU instruction set and architecture. Structural, data and control hazards in a RISC processor, forwarding loops, branch mechanisms. Memory architectures in CPUs such as register files and caches.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): CMPE 125 (with grade of "C-" or better), Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 142 - Operating Systems Design

3 unit(s)

Overview: history, concepts, system calls and structures. Management of major components: processes, memory, input/output and files. Design of system calls and device drivers for hardware dependence. Concepts of kernel and shell, file protection and interactive computation.

Prerequisite(s): CMPE 102, CMPE 126 (all with grades of "C-" or better). Computer Engineering or Software Engineering Majors Only.

Pre/Corequisite(s): CMPE 130 (with grade of "C-" or better).

Grading: Letter Graded

CMPE 146 - Real-Time Embedded System Co-Design

3 unit(s)

Embedded system architecture with real-time operating system including microcontrollers, interfacing techniques for industrial applications using transducers, sensors, and A/D-D/A converters. Hardware/software integration and codesign.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): CMPE 110 and CMPE 127 with grade of "C-" or better. Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded.

CMPE 148 - Computer Networks I

3 unit(s)

Comparative evaluation of network architecture, layering model, standards, protocol examples for ISO and TCP/IP layers. Network applications, transport layer protocols, Internet routing, data link and physical transmissions. Applications in world wide web, file transfer, electronic mail, peer-to-peer and other areas.

Prerequisite(s): For CMPE major: CMPE 124 and CMPE 126 (with a grade of C- or better); for SE major: CMPE 120 and CS 146 (with a grade of C- or better); Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 150 - System Architecture and Electronic Design for Robotics

3 unit(s)

Design and architecture for generating autonomous and human-reliant robots, algorithm development for object perception, electronic design and system integration for cognitive and sensory capabilities of robots, mechanisms for actuation and mobility, fault diagnosis and self-calibration.

Prerequisite(s): CMPE 110, CMPE 124

Grading: Letter Graded

CMPE 152 - Compiler Design

3 unit(s)

Principles of lexical analysis, finite state automata and parsing; issues of variable declarations, variable types, control statements, function calls, nested scopes and efficient assembler target code.

Prerequisite(s): CMPE 126 and CMPE 102 both with a "C-" or better

Grading: Letter Graded

CMPE 163 - Introduction to Computer Graphics and Augmented Reality

3 unit(s)

Introduction to 2D and 3D vector and pixel graphics, 2D and 3D transformations, world to viewer transformation pipeline, perspective projection, hidden line and surface removal, decoration algorithm and texture mapping, integration of pixel graphics and augmented reality, and hands-on laboratories.

Prerequisite(s): CMPE 127; MATH 33LA or MATH 39 or EE 112. All with a C- or better.

Pre/Corequisite(s): ENGR 100W.

Grading: Letter Graded

Cross-listed with SE 163. Computer Engineering is responsible for scheduling.

CMPE 165 - Software Engineering Process Management

3 unit(s)

Integrated approach to managing development within small teams; including mission statement, synthesis of design concepts, tradeoff studies, risk assessment and the interactions encountered in the optimal design, development, manufacture and test of systems.

Prerequisite(s): CMPE 131 with a "C-" or better.

Grading: Letter Graded

CMPE 172 - Enterprise Software Platforms

3 unit(s)

Introduction to enterprise software systems. Covers network operating systems, DBMS, transaction monitors, groupware, distributed objects, system management and the Web. Covers standards such as J2EE, CORBA, SQL, JDBC, and HTTP; and emerging software technologies.

Prerequisite(s): CMPE 142 or CS 149 with grade of 'C-' or better. Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 180 - Individual Studies

1-3 unit(s)

Individual work in computer engineering.

Prerequisite(s): Upper division standing and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

Cross-listed with SE 180. Computer Engineering is responsible for scheduling.

CMPE 180A - Data Structures and Algorithms in C++

3 unit(s)

Data representation and preprocessing, proximity, finding nearest neighbors, dimensionality reduction, exploratory analysis, association Object-oriented data organization and representation as strings, arrays, stacks, queues, dequeues, lists, sets, trees, tables, and graphs. Sorting and searching and algorithm design and performance analysis. Testing methods and data are discussed.

Prerequisite(s): Admission into MS Artificial Intelligence, MS Computer Engineering or MS Software Engineering.

Grading: Credit/No Credit

CMPE 180B - Database Systems

3 unit(s)

File organization and storage structure, database system architecture, entity relationship model, normalization techniques, SQL, relational algebra, storage organization, query processing, and concurrency control.

Prerequisite(s): Admission into MS Artificial Intelligence, MS Computer Engineering or MS Software Engineering.

Grading: Credit/No Credit

CMPE 180C - Operating Systems Design

3 unit(s)

History, concepts, system calls and structures. Management of major components: processes, memory,

input/output and files. Design of system calls and device drivers for hardware dependence. Concepts of kernel and shell, file protection and interactive computation.

Prerequisite(s): Admission into MS Computer Engineering or MS Software Engineering

Grading: Credit/No Credit

CMPE 180D - Digital Design and Microprocessors

3 unit(s)

Binary codes/number representations, binary arithmetic, combinatorial logic design with gates, logic minimization, decoders, encoders, adders; sequential logic design with latches, flip-flops, registers, counters, state machine design; basic microprocessor architectures (control/data paths) and memory subsystems, asynchronous logic (racing, glitches, timing diagrams).

Prerequisite(s): Admission into MS Computer Engineering

Grading: Credit/No Credit

CMPE 181 - Internet of Things Platforms

3 unit(s)

Internet of Things (IoT) landscape, fundamentals, architecture, standards and protocols, software and hardware systems, security, and data analytics. Investigate state-of-the-art IoT platforms. Develop hands-on expertise in IoT system development.

Prerequisite(s): For CMPE major: CMPE 124 and CMPE 126, both with a C- or better; for SE major: CMPE 120 and CS 146, both with a C- or better.

Grading: Letter Graded

CMPE 182 - Internet of Things Security

3 unit(s)

Secure Internet of Things (IoT) system design, vulnerabilities, attacks, and countermeasures, principles of privacy-by-design, secure IoT system development and lifecycle. Blockchains, distributed consensus, and identity management systems for connected devices.

Prerequisite(s): CMPE 126 or CS 146, with a C- or better.

Grading: Letter Graded

CMPE 183 - Cryptocurrencies and Blockchains

3 unit(s)

Technical aspects of cryptocurrencies, blockchains, distributed consensus, and decentralized applications. Basics of Bitcoin and Ethereum including Byzantine agreement, smart contracts and solidity as well as legal aspects, regulations and token economics.

Prerequisite(s): CMPE 126 or CS 146.

Grading: Letter Graded

CMPE 185 - Autonomous Mobile Robots

3 unit(s)

Basic concepts and algorithms for mobile robots that act autonomously in complex environments. Emphasis on mobile robot locomotion and kinematics, environment perception, probabilistic map-based localization and mapping, motion planning, and programming in Robot Operating System (ROS).

Prerequisite(s): ISE 130 or MATH 161A; and MATH 33LA; and, CMPE 126 or CS 146.

Grading: Letter Graded

CMPE 187 - Software Quality Engineering

3 unit(s)

Software testing and quality assurance engineering concepts, processes, models, criteria, and methods. Software unit testing, integration, function validation, system performance and reliability evaluation; Software security testing methods and tools; software quality management, control systems, standards, and evaluation metrics.

Prerequisite(s): CMPE 131 with a C- or better. Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

CMPE 188 - Machine Learning for Big Data

3 unit(s)

Introduction to machine learning and pattern recognition for big data analytics; machine learning concepts, theories, approaches, algorithms, and big data analytic applications; supervised learning unsupervised learning and learning theory.

Prerequisite(s): CMPE 126 or CS 146

Grading: Letter Graded

Cross-listed with SE 188. Computer Engineering is responsible for scheduling.

CMPE 189 - Special Topics in Computer Engineering

3 unit(s)

Advanced topics in Computer Engineering. Content varies from semester to semester.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

CMPE 192 - International Program Studies

1 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CMPE 195A - Senior Design Project I

2 unit(s)

Comprehensive plan and preliminary design of a group computer/software engineering project; integration of knowledge in science, technologies and team processes; group written report and oral presentation; global and social issues in engineering; individual professional development plans. when taken as part of CMPE major sequence.

Lab 6 hours.

Satisfies SJSU Studies S when taken as part of CMPE major sequence.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses.

For CMPE Majors: CMPE 125, CMPE 127, CMPE 130, CMPE 131 (all with a C- or better); ENGR 100W (with a grade of C or better); in good academic and major standings and graduation application on file.

For SE Majors: CMPE 133, ISE 130 or MATH 161A (all with a grade of C- or better), ENGR 100W (with a grade of C or better); in good standing academic and major standings and graduation application on file.

Corequisite(s): ENGR 195A.

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: CMPE 195B, ENGR 195A and ENGR 195B.

CMPE 195B - Senior Design Project II

3 unit(s)

Implementation of group design project initiated in CMPE 195A; group oral presentation and written report; integrated global and social issues in engineering.

Misc/Lab: Lab 9 hours.

Satisfies SJSU Studies V: Cultures and Global Understanding when taken as part of CMPE major sequence.

Prerequisite(s): CMPE 195A (with grade of "C" or better). Juniors and Seniors only. Allowed declared majors: Computer Engineering, Engineering, Software Engineering.

Corequisite(s): ENGR 195B

Grading: Letter Graded.

Note(s): Meets GE Areas S and V when course is taken in combination with: CMPE 195A, ENGR 195A and ENGR 195B.

CMPE 195E - Senior Design Project I

1 unit(s)

Comprehensive plan and preliminary design of a group computer/software engineering project; integration of knowledge in science, technologies and team processes; group written report and oral presentation; individual professional development plans.

Prerequisite(s): For CMPE Majors: CMPE 125, CMPE 127, CMPE 130, CMPE 131 (all with a C- or better); ENGR 100W (with a grade of C or better); in good academic and major standings and graduation application on file. For SE Majors: CMPE 133, ISE 130 or MATH 161A (all with a grade of C- or better), ENGR 100W (with a grade of C or better); in good standing in the major, graduation application on file.

Grading: Letter Graded

CMPE 195F - Senior Design Project II

3 unit(s)

Implementation of group design project initiated in CMPE 195E; group oral presentation and written report.

Lab 9 hours.

Prerequisite(s): CMPE 195A (grade of C or better); in good academic and major standings.

Grading: Letter Graded

CMPE 198 - Technology and Civilization

3 unit(s)

History, development, and use of technology in different cultures. Technology's impact on society, global environment, the workplace, cultural values, gender roles, and newly industrialized countries of the world.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENGR 198 / ME 198 / TECH 198. Technology is responsible for scheduling.

Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

CMPE 200 - Computer Architecture

3 unit(s)

Computer design overview, processor instruction set architecture and microarchitecture, instruction-level parallelism, memory hierarchy, storage and I/O systems, multicore/multiprocessor and data/thread-level parallelism, introduction to parallel programming.

Prerequisite(s): CMPE 180D or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 202 - Software Systems Engineering

3 unit(s)

Integrated approach to software design and development including requirements elicitation and analysis, system design and construction through studying multiple facets of software development processes, design methodologies, modeling approaches, and implementation techniques.

Prerequisite(s): Classified graduate standing or instructor consent. Artificial Intelligence or Computer

Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 206 - Computer Network Design

3 unit(s)

Network topology and queuing theory. The seven layers of the ISO reference model: physical, data link, network, transport, session, presentation and application. Example networks. Network design project.

Prerequisite(s): Classified standing, or instructor consent. Allowed Declared Majors: Artificial Intelligence, Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 207 - Network Programming and Application

3 unit(s)

Development and implementation of networking software for building distributed applications. Application Programming Interfaces: BSD Sockets, Winsock, Remote Procedure Call and Middleware. Network programming project.

Prerequisite(s): CMPE 206, or instructor consent.

Grading: Letter Graded

CMPE 208 - Network Architecture and Protocols

3 unit(s)

In-depth study of the principles and architecture of Internet protocols in current practice. Analysis of protocols of network, transport, and application layers. Topics will also cover emerging network architecture and protocols. Network analysis project..

Prerequisite(s): CMPE 206 or instructor consent.

Grading: Letter Graded

CMPE 209 - Network Security and Applications

3 unit(s)

Network security protocols and applications, cryptography algorithms, authentication systems, intrusion detection and response systems, network attacks and defenses, system security including malware analysis, and building of secure systems.

Prerequisite(s): CMPE 206, EE 281, or instructor consent. Computer Engineering or Software Engineering or Artificial Intelligence or Electrical Engineering majors only.

Grading: Letter Graded

CMPE 210 - Software-defined Networks and Network Functions Virtualization

3 unit(s)

The course covers development and implementation of Software-defined Networks and Network Functions Virtualization for building programmable network applications. It includes their concepts with various use

cases. Students conduct a network programming project related to SDN/NFV by using open source projects.

Prerequisite(s): CMPE 206 (or equivalent graduate network courses) or instructor consent.

Grading: Letter Graded

CMPE 211 - Advanced Network Security in IoT

3 unit(s)

Advanced security topics in the Internet of things (IoT). SDN/NFV(Software Defined Networking and Network Function Virtualization) and blockchain to defend against IoT attacks and protect IoT infrastructure. Network security protocols and applications, intrusion detection, network attacks and defenses, and system-level security issues.

Prerequisite(s): CMPE 206 or Instructor Consent

Grading: Letter Graded

CMPE 212 - System Verification

3 unit(s)

Introduction to SoC system configuration and integration; on chip protocols; assertion based verification; code and functional coverage metrics; methodologies, tools, and environments for functional verification of special function blocks (IPs) and integrated SoC-based computer systems.

Prerequisite(s): CMPE 200 and CMPE 264 or instructor consent.

Grading: Letter Graded

CMPE 213 - Parallel Computing

3 unit(s)

How to effectively program parallel computers, from smartphones to large clusters. Types of parallel architectures, routing, communication operations, parallel programming models, performance analysis, parallel algorithms for sparse matrix and graph problems, load balancing, advanced topics. Applications to Big Data Analytics.

Prerequisite(s): Classified graduate standing or instructor consent

Grading: Letter Graded

CMPE 214 - GPU Architecture and Programming

3 unit(s)

Explores state-of-the-art parallel architecture and various parallel programming techniques. Investigate the architectural difference between CPU and various parallel architectures including GPU, programming basics of parallel platforms such as CUDA, optimization and debugging techniques.

Prerequisite(s): CMPE 140 or CMPE 200

Grading: Letter Graded

CMPE 217 - Human AI Interaction

3 unit(s)

Intention, joint intention and action, artificial agency, autonomy, shared autonomy, different types of

collaboration, teleoperation, team work, human feedback, assistance, inference, trajectory optimization, inverse reinforcement learning, learning from feedback.

Prerequisite(s): Classified graduate standing or instructor consent. Computer Engineering and/or software engineering and/or AI majors only.

Grading: Letter Graded.

CMPE 219 - Cybersecurity Clinics with HCI

3 unit(s)

Design, evaluation, and implementation of interactive computing systems for human use in order to develop a cybersecurity solution. The interdisciplinary area between Human-Computer Interaction and cybersecurity: common vulnerabilities, explainable AI, human-centered security design concepts, social and ethical issues, and Internet of Things.

Prerequisite(s): Classified graduate standing or instructor consent.

Grading: Letter Graded.

CMPE 220 - System Software

3 unit(s)

System software overview, assemblers, macro-assemblers, loaders and linkers, compilers and operating systems. Design project.

Prerequisite(s): CMPE 180A and CMPE 180C, or classified standing. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 226 - Database Systems

3 unit(s)

Database architectures, technologies, and practices for enterprise systems that use structured, semi-structured, and unstructured data. Provides opportunities to research and acquire experience using modern and emerging concepts in relational and non-relational database theory and technologies.

Prerequisite(s): CMPE 272 or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 235 - Mobile Software System Design

3 unit(s)

Study of wireless-based software systems in design and engineering, underlying networks, infrastructures and frameworks, wireless security, mobile user security & privacy (i.e. biometric security), emergent mobile programming platforms and technologies (such as RFID/Barcode/NFC), mobile commerce and service application systems.

Prerequisite(s): CMPE 220 or CMPE 202 or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 240 - Advanced Computer Design

3 unit(s)

Architecture of a computing system including system bus, memory subsystems and peripherals. Unidirectional and bidirectional bus architectures. SRAM, SDRAM and FLASH memories. Design of DMA, interrupt controller, transmitter/receiver, timer, display adapter, A/D and D/A converters and other system peripherals. Design of memory and peripheral bus interfaces.

Prerequisite(s): CMPE 180D or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 242 - Embedded Hardware Design

3 unit(s)

Advanced topics dealing with microprocessor and microcontroller hardware and firmware including processor architecture, advanced memory and I/O systems design, multilevel bus architecture, interrupt systems. Design project.

Prerequisite(s): CMPE 180A and CMPE 180D, classified standing, or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 243 - Embedded Systems Applications

3 unit(s)

Embedded system interfacing techniques; peripheral devices; discussion of industrial, telecommunication, automotive, medical, and consumer applications of embedded systems. Design project.

Prerequisite(s): CMPE 180A and CMPE 180D, classified standing, or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 244 - Embedded Software

3 unit(s)

Experiments dealing with advanced embedded software programming concepts, interfacing techniques, hardware organization, and software development using embedded systems. Individual projects.

Prerequisite(s): CMPE 180A and CMPE 180D, classified standing, or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 245 - Embedded Wireless Architecture

3 unit(s)

Embedded wireless architecture with basic communication protocols and hands-on labs with state of the art embedded system development tools.

Prerequisite(s): CMPE 180A and CMPE 180D, classified standing, or instructor consent. Artificial

Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 246 - Interface Design in Embedded Systems

3 unit(s)

Oscillator configuration, parallel and serial I/O port initialization and interface building techniques with Microchip DSP microcontrollers. Integration of external memory blocks, MEMS sensors, MEMS microphone, ADC, DAC and image recognition camera to achieve a specific system functionality. Servo motor, stepper motor and brushless motor interface designs and control. Design specification and development with Microchip MPLABX design tools.

Prerequisite(s): CMPE 180A and CMPE 180D, classified standing, or instructor consent.

Grading: Letter Graded

CMPE 249 - Intelligent Autonomous Systems

3 unit(s)

Introduction to autonomous systems and intelligent solutions for self-driving cars, advanced topics in multi-modal sensing, sensor fusion, AI computing, mapping, deep learning, object detection, perception, localization, prediction, path planning, control, reinforcement learning, and Robotic Operating System (ROS).

Prerequisite(s): CMPE 252 or CMPE 257 or instructor consent.

Grading: Letter Graded

CMPE 252 - Artificial Intelligence and Data Engineering

3 unit(s)

Introduction to important concepts and techniques from the fields of artificial intelligence, evolution of AI systems, intelligent agents, problem solving by searching, machine learning, neural networks, reinforcement learning, and knowledge representation. The data engineering and science process is covered as well as applications of AI and ethical considerations.

Prerequisite(s): Classified graduate standing.

Grading: Letter Graded

CMPE 255 - Data Mining

3 unit(s)

Data representation and preprocessing, proximity, finding nearest neighbors, dimensionality reduction, exploratory analysis, association analysis and sequential patterns, supervised learning: model selection and evaluation, overfitting, clustering, advanced topics.

Prerequisite(s): CMPE 180A, classified standing, or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 256 - Advanced Data Mining

3 unit(s)

Data mining and machine learning algorithms and applications for big data. Recommender systems, ranking and evaluation, graph mining, social network analysis, sentiment analysis, advanced topics.

Prerequisite(s): CMPE 180A, classified standing, or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 257 - Machine Learning

3 unit(s)

Machine learning concepts, feasibility and learning types, theory of generalization, bias and variance, linear models for classification and regression, nonlinear transformation, regularization and validation, kernel methods, radial basis functions, support vector machines, ensemble methods, neural networks, and hands-on projects.

Prerequisite(s): CMPE 180A, classified standing, or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 258 - Deep Learning

3 unit(s)

Deep neural networks and their applications to various problems, e.g., speech recognition, image segmentation, and natural language processing. Covers underlying theory, the range of applications to which it has been applied, and learning from very large data sets.

Prerequisite(s): CMPE 255 or CMPE 257 or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Grading: Letter Graded

CMPE 259 - Natural Language Processing

3 unit(s)

Theory, design, and implementation of Natural Language Processing (NLP) systems. Topics include language representation and modeling, sequence modeling, Hidden Markov Models, probabilistic context-free grammars, Bayesian networks, Conditional Random Fields, and deep learning architectures for sequence processing.

Prerequisite(s): CMPE 252 or CMPE 255 or CMPE 257, or instructor consent. Artificial Intelligence, Computer Engineering, and Software Engineering Master's students only.

Grading: Letter graded.

CMPE 260 - Reinforcement Learning

3 unit(s)

Reinforcement Learning (RL) and Deep Reinforcement Learning (DRL). Topics include RL formalism, Markov decision process, Deep Q-Network, and reinforcement learning programming platforms. Also covered are relevant applications of RL in various fields.

Prerequisite(s): CMPE 252 or CMPE 255 or CMPE 257 or instructor consent.

Grading: Letter Graded

CMPE 264 - Advanced Digital and Computing System Design

3 unit(s)

Advanced topics in register-transfer-level design of complex digital functional blocks, application-specific instruction set processors, and system-level integration/validation using Verilog/VHDL/C-level hardware description languages.

Prerequisite(s): CMPE 200 or instructor consent.

Grading: Letter Graded

CMPE 265 - High Speed Digital System Design

3 unit(s)

Introduction to high speed interface design techniques and analyzing high speed circuits utilizing latest modeling and simulation tools to provide necessary knowledge for the printed circuit board layout.

Prerequisite(s): CMPE 200 or instructor consent.

Grading: Letter Graded

CMPE 266 - Big Data Engineering and Analytics

3 unit(s)

New big data related technologies, architecture, tool, algorithms and analytics to manage and extract values and hidden knowledge from data whose scale, diversity, speed and complexity are big.

Prerequisite(s): CMPE 272 or Instructor Consent

Grading: Letter Graded

CMPE 270 - Information Engineering

3 unit(s)

Technologies, strategies and systems for planning, analyzing, designing and implementing data resources in order to ensure and continuously improve processes in the enterprise; object-oriented development, Computer-Aided Software/Systems Engineering (CASE); information superhighway, client/server computing and distributed database management systems.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): CMPE 30 or instructor consent. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Cross-listed with ISE 270. Industrial and Systems Engineering is responsible for scheduling.

CMPE 272 - Enterprise Software Platforms

3 unit(s)

Enterprise software, system and virtualized platforms. OSs, NOS, security, databases (OLTP, big data, analytics), transactions, groupware, components, web services, web, systems management, and app development. Standards and emerging technologies.

Prerequisite(s): Artificial Intelligence or Computer Engineering or Software Engineering majors or instructor consent.

Grading: Letter Graded

CMPE 273 - Enterprise Distributed Systems

3 unit(s)

Introduction to application protocols for large scale distributed systems including object request brokers, asynchronous messaging, and Web services. Lab is based on using protocols to build distributed systems.

Prerequisite(s): Java programming or instructor consent. Artificial Intelligence or Computer Engineering or Software Engineering majors only.

Corequisite(s): CMPE 272

Grading: Letter Graded

CMPE 274 - Business Intelligence Technologies

3 unit(s)

This course covers technologies that are key to delivering business intelligence to an enterprise. The goal of business intelligence is to analyze and mine business data to understand and improve business performance by transforming business data into information into knowledge.

Prerequisite(s): CMPE 272 or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 275 - Enterprise Application Development

3 unit(s)

Distributed component design, scalability, messaging, and integration practices for modern and emerging architectures and technologies.

Prerequisite(s): CMPE 273 or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 277 - Smartphone Application Development

3 unit(s)

Architectures, technologies, and programming concepts for developing smartphone applications. Covers current smartphone/tablet OSs, application development, and deployment environments.

Prerequisite(s): Classified graduate standing or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 279 - Software Security Technologies

3 unit(s)

Fundamental concepts, methods, and tools used to design and implement software security technologies for constructing trustworthy centralized, distributed, or enterprise-wide software systems.

Corequisite(s): CMPE 272 or CMPE 220 or instructor consent.

Grading: Letter Graded

CMPE 280 - Web UI Design and Development

3 unit(s)

Web User-interface (UI) design and development with contemporary web standards. Understand interaction and interface design principles and processes for rich web applications, mobile web, web graphics, web design fundamentals, tools, interaction using client side scripting and server side frameworks.

Prerequisite(s): Classified graduate standing or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 281 - Cloud Technologies

3 unit(s)

Cloud computing concepts, evolution, architectures, infrastructures, opportunities, risks, enterprise adoption strategies, standards and policies, Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), Infrastructure-as-a-Service (IaaS), modern cloud computing technologies and tools, case studies and team projects.

Corequisite(s): CMPE 272 or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 282 - Cloud Services

3 unit(s)

Cloud service architecture and layering, administrative issues, resiliency and security considerations; business development, operations and business support service, case studies and team projects.

Prerequisite(s): CMPE 281 or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 283 - Virtualization Technologies

3 unit(s)

Virtualization concepts, components and infrastructure, hardware and software virtualization, virtualization machine life cycle management, virtualization services, case studies, and team projects.

Corequisite(s): CMPE 272 or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 284 - Storage and Network Virtualization

3 unit(s)

Network and storage technologies, network virtualization and storage virtualization, including virtual local area networks, load balancers, firewalls, virtual private networks, network attached storage and storage area networks, case studies, and team projects.

Prerequisite(s): CMPE 283 or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 285 - Software Engineering Processes

3 unit(s)

Software system development with emerging software engineering processes and technologies; planned and agile development processes, processes of Service-Oriented Architecture; component-based, Web-based, mobile based, event programming, wireless, user interface, and database access technologies.

Corequisite(s): CMPE 202 or CMPE 220 or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 286 - Internet of Things

3 unit(s)

Designed to give an overview of Internet of Things (IoT) as well as associated foundations including model layers, key performance characteristics, key requirements for communication over the Internet, sensing technologies, constrained devices, protocol stacks, and the IoT service platform.

Prerequisite(s): MSSE graduate standing or instructor consent.

Grading: Letter Graded

CMPE 287 - Software Quality Assurance and Testing

3 unit(s)

Software testing concepts, processes, models, criteria, and methods; software unit testing, integration, function validation, system performance measurement, and reliability evaluation; software security testing methods, assurance criteria, and validation tools; software security assurance process, standards, techniques, and case study.

Corequisite(s): CMPE 202 or CMPE 220 or instructor consent. Computer Engineering and Software Engineering majors only.

Grading: Letter Graded

CMPE 292 - International Program Studies

1-9 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing

other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CMPE 294 - Computer Engineering Seminar

3 unit(s)

Provides graduate students with a background to conduct research, write proposals and present results in oral and written form.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CMPE 294A - Cyber Security Seminar

3 unit(s)

Provides graduate students with the background and capability to conduct research and write technical reports in the area of cyber security

Prerequisite(s): Instructor consent

Grading: Letter Graded

CMPE 295A - Master Project I

3 unit(s)

Comprehensive plan and preliminary design of a computer/software engineering project; integration of knowledge in technologies, processes and management to support program outcomes.

Lab 9 hours.

Prerequisite(s): Classified status, good standing, completion of at least 15 units of graduation degree credit, completion of two degree core courses and at least one specialization course, and graduate director consent.

Grading: Letter Graded/Incomplete.

CMPE 295B - Master Project II

3 unit(s)

Completion of an in-depth project to achieve the program outcomes and satisfy the cumulating experience; write a detailed project report; make a comprehensive presentation and demonstration.

Lab 9 hours.

Prerequisite(s): CMPE 295A (with a B or better) or CMPE 295W (with a B or better), completion of all degree core courses and two specialization courses from the same specialization, advancement to

candidacy, and graduate director consent.

Grading: Letter Graded/RP.

CMPE 295W - Master's Project

3 unit(s)

In-depth developmental engineering work relating to problems of interest. Project includes proposal formulation, analysis, design, implementation, and testing.

9 hours lab.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Completed degree and specialization core requirements, classified status, in good standing and graduate advisor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

CMPE 297 - Special Topics in Computer/Software Engineering

3 unit(s)

Special topics to augment regularly-scheduled graduate courses. May be taken up to three times in different topic areas.

Course is repeatable for up to 9 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

CMPE 298 - Special Problems

1-6 unit(s)

Advanced individual work in computer engineering.

Prerequisite(s): Instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

CMPE 298I - Computer/Software Engineering Internship

1-6 unit(s)

Field work for computer and software engineering graduate students. A report is required at the end of the semester addressing the goals set at the start of the assignment.

Prerequisite(s): Completed 6 units degree core plus six additional degree program units, classified status, in good standing and graduate advisor consent

Grading: Mandatory Credit/No Credit/RP

CMPE 299A - Master Thesis I

3 unit(s)

The first part of a thesis culminating the work for the master's degree in the specialization.

Prerequisite(s): Classified status, good standing, completion of at least 15 units of graduation degree credit, two core courses, and at least one specialization course; and graduate director consent.

Grading: Credit/No Credit/RP.

CMPE 299B - Master Thesis II

3 unit(s)

The second part of a thesis culminating the work for the master's degree in the specialization.

Prerequisite(s): CMPE 299A with a CR grade or CMPE 295W with a B or better, completion of all core courses and two specialization courses, advancement to candidacy, and graduate director consent.

Grading: Credit/No Credit/RP.

Computer Science

CS 22A - Python for Everyone

3 unit(s)

Introduction to Python programming in interesting, relevant, and practical contexts. Programming skills are developed to solve problems in such fields as life sciences, mathematics, and business. Fundamental programming constructs: data structures and algorithms, iterations, and functions. Course is intended for students who have no prior programming experience.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): CS 1022AS is required for Math Enrollment Category M-III and M-IV.

Grading: Letter Graded

CS 22B - Python Programming for Data Analysis

3 unit(s)

Hands-on Python programming skills for data analysis. Skills include finding a solution for a given problem and casting it as an algorithm, translating an algorithm to executable code, and debugging and testing code. Applications focus on computational techniques to understand, analyze, and visualize data.

Prerequisite(s): CS 22A with a grade of C- or better, or consent of the instructor; Allowed Majors: Data Science, Biology (all) or Chemistry (all).

Grading: Letter Graded

CS 25 - The Digital World and Society

3 unit(s)

The secure, effective and ethical use of information technology. The effect of such technology on people and institutions. Technology-related challenges to society and policy. Frameworks for the analysis of information technology with respect to its cultural, historical, environmental, and spatial contexts.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Cross-listed with ENGR 25. General Engineering is responsible for scheduling.

CS 42 - Discrete Mathematics

3 unit(s)

Sets, logic, methods of proof including mathematical induction, functions, relations, elementary combinatorics, probability, Boolean algebras.

Prerequisite(s): Math Enrollment Category M-I or M-II and satisfactory score on the Precalculus Proficiency Assessment; AP Calculus AB score 4 to 5, AP Calculus BC score 4 to 5, or AP Pre-Calculus score 4 to 5 to waive the exam; MATH 19 with a grade of "B" or better to waive the exam; or MATH 18A and MATH 18B, with a grade of "B" or better in each to waive the exam.

Grading: Letter Graded.

Note(s): Students who are repeating MATH 42 and MATH 42X are not eligible for this class and must take MATH 42X.

Cross-listed with MATH 42. Mathematics and Statistics is responsible for scheduling.

CS 42X - Discrete Mathematics

3 unit(s)

Sets, logic, methods of proof including mathematical induction, functions, relations, elementary combinatorics, probability, Boolean algebras.

Prerequisite(s): Math Enrollment Category M-I, M-II, M-III and satisfactory score on the Precalculus Proficiency Assessment; AP Calculus AB score 4 to 5, AP Calculus BC score 4 to 5, or AP Pre-Calculus score 4 to 5 to waive the exam; MATH 19 with a grade of C- or better to waive the exam; or MATH 18A and MATH 18B with a grade of C- or better in each to waive the exam.

Corequisite(s): MATH 42W.

Grading: Letter Graded.

Cross-listed with MATH 42X. Mathematics and Statistics is responsible for scheduling.

CS 46A - Introduction to Programming

4 unit(s)

Introduction to programming for anyone new to the field or who needs a refresher with basic Java programming syntax, object-oriented paradigm, control structures, iteration, etc. Hands-on activities in writing, compiling, executing, and debugging programs for solving real-world problems.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III, or MATH 1 with a grade of C- or better; and a major of Computer Science, Data Science, Computer Science and Linguistics, Mathematics, Statistics, Applied and Computational Math, Software Engineering, Forensic Science: Digital Evidence, or Undeclared; or instructor consent.

Grading: Letter Graded

CS 46AW - Introduction to Programming Workshop

1 unit(s)

Designed to help all students excel in Introduction to Programming. Students work in groups on challenging problems to help them understand programming concepts more deeply and lay the groundwork for success in future courses.

Repeatable for a total of 2 units.

Prerequisite(s): CS 46A (in an object-oriented language) or CS 46AX, or current enrollment in CS 46AX.

Grading: Credit/No Credit.

CS 46AX - Introduction to Programming

4 unit(s)

Introduction to programming for anyone new to the field or who needs a refresher with basic Java programming syntax, object-oriented paradigm, control structures, iteration, etc. Hands-on activities in writing, compiling, executing, and debugging programs for solving real-world problems.

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III, or MATH 1 with a grade of C- or better; and a major of Computer Science, Data Science, Computer Science and Linguistics, Mathematics, Statistics, Applied and Computational Math, Software Engineering, Forensic Science: Digital Evidence, or Undeclared; or instructor consent.

Corequisite(s): CS 46AW.

Grading: Letter Graded.

CS 46B - Introduction to Data Structures

4 unit(s)

Fundamental data structures including lists, stacks, queues, and trees, with algorithms for inserting, deleting, searching, and sorting information within them efficiently. Additional topics include Big-O analysis, exceptions, hashing, Java collections framework, generics, iterators, interfaces, recursion, and debugging. Weekly hands-on activities.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): CS 46A or CS 46AX (with grade of C- or better). (If CS 46A was not in Java, then CS 46AW also required.) Math Enrollment Category M-I or M-II and satisfactory score on the Precalculus Proficiency Assessment (70 or higher), or MATH 19 with a C- or better, or MATH 18A and MATH 18B with C- or better; Allowed Majors: Computer Science, Data Science, Computer Science and Linguistics, Stats, Applied/Computational Math, Software Engineering or Forensic Science: Digital Evidence.

Grading: Letter Graded

CS 47 - Introduction to Computer Systems

3 unit(s)

Instruction sets, assembly language and assemblers, linkers and loaders, data representation and manipulation, interrupts, pointers, function calls, argument passing, and basic gate-level digital logic design.

Prerequisite(s): CS 42 / MATH 42 or CS 42X / MATH 42X, and CS 46B (with a grade of "C-" or better); Allowed Majors: Computer Science, Data Science, Forensic Science: Digital Evidence.

Grading: Letter Graded.

CS 48 - Applied Algorithms

1 unit(s)

Creating and implementing algorithms to solve problems. Techniques covered include using built-in collection classes, bitwise operators, modulo operator, and input/output classes. Emphasis on using data structures learned in CS 46B. Students write a Java program every week.

Prerequisite(s): CS 46B and one Java course (with grades of C- or better), or instructor consent.

Grading: Letter Graded.

CS 49C - Programming in C

3 unit(s)

Beginning course in the C language.

Prerequisite(s): Previous programming experience and completion of math GE; Allowed Majors: Computer Science, Math, Math ITEP or Forensic Science: Digital Evidence.

Grading: Letter Graded

CS 49J - Programming in Java

3 unit(s)

Introduction to the Java programming language and libraries. Topics include fundamental data types and control structures, object-oriented programming, string processing, input/output, and error handling. Use of Java libraries for mathematics, graphics, collections, and for user interfaces.

Prerequisite(s): CS 46B or equivalent in a language other than Java; Allowed Majors: Computer Science, Data Science, Math, Math ITEP, Stats, Applied/Computational Math, Software Engineering, Forensic Science: Digital Evidence, or Undeclared.

Grading: Letter Graded

CS 50 - Scientific Computing I

2 unit(s)

Computer systems and structured programming, emphasizing solutions of problems in the atmospheric sciences using Python programming. Includes the UNIX operating system, mass data handling and data visualization.

Lecture 1 hour/Lab 3 hours.

Prerequisite(s): MATH 30 or MATH 30X.

Corequisite(s): For METR majors: MATH 31 or MATH 30X, METR 60, PHYS 50. For Climate Science majors: METR 60 and CHEM 1A.

Grading: Letter Graded

Cross-listed with MATH 50 / METR 50. Meteorology and Climate Science is responsible for scheduling.

CS 85A - Practical Computing Topics

1 unit(s)

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format.

Different versions of this course may be repeated for credit.

Prerequisite(s): Varies with topic

Grading: Credit/No Credit

CS 85C - Practical Computing Topics

3 unit(s)

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format. Different versions of this course may be repeated for credit.

Prerequisite(s): Additional Varies with topic

Pre/Corequisite(s): eligibility for MATH 19

Grading: Letter Graded

CS 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CS 100W - Technical Writing Workshop

3 unit(s)

Advanced writing through preparation of technical reports and presentations. Improving skills for writing subject-related reports, project proposals and personal resumes through practice and evaluation. Course assignments will be related to issues concerning careers in computer science.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: Computer Science, Data Science, Computer Science and Linguistics, or Mathematics.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

CS 108 - Introduction to Game Studies

3 unit(s)

Introduction to the systems, design, history, and cultural analysis of games with emphasis on critical studies, development, technological literacy, markets and impact on society.

Misc/Activity: 6 hours activity.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded.

Cross-listed with ART 108. Art and Art History is responsible for scheduling.

CS 116A - Introduction to Computer Graphics

3 unit(s)

Vector geometry, geometric transformations and the graphics pipeline. Basic raster graphics algorithms for drawing discrete lines, clipping, visible surface determination and shading. Display of curves and surfaces. Graphics data structures.

Prerequisite(s): Prerequisite(s): MATH 31 or MATH 31X, MATH 39, CS 146 (with a grade of "C-" or better in each) and previous programming experience in C/C++; Allowed Majors: Computer Science, Data Science, Software Engineering or Applied/Computational Math or instructor's consent.

Grading: Letter Graded

Cross-listed with SE 116A. Computer Science is responsible for scheduling.

CS 116B - Computer Graphics Algorithms

3 unit(s)

In-depth discussion of algorithms and techniques used in computer graphics and their implementation. Topics include: animation, fractals, anti-aliasing, fill algorithms, visible surface algorithms, color and shading, ray tracing, radiosity and texture maps. Substantial programming required.

Prerequisite(s): CS 116A (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

Note(s): Offered only occasionally.

Cross-listed with SE 116B. Computer Science is responsible for scheduling.

CS 122 - Advanced Programming with Python

3 unit(s)

Advanced features of the Python programming language with emphasis on programming practice. Course involves substantial programming projects in Python.

Prerequisite(s): CS 146 (with a grade of "C-" or better) or instructor consent. Computer Science, Data Science, Computer Science and Linguistics, Applied and Computational Math, or Software Engineering majors only.

Grading: Letter Graded

CS 123A - Bioinformatics I

3 unit(s)

Introduction to algorithms, tools, and databases of Bioinformatics. Biological foundations: central dogma; sequence databases; pairwise alignment algorithms and tools; Blast; phylogenetics. Possible additional

topics: protein structure, multiple sequence alignment, next-gen sequencing, epigenetics, CRISPR. Project applying these approaches to real-world problems.

Prerequisite(s): CS 46B or BIOL 31, or instructor consent. Allowed Majors: Computer Science, Data Science, Software Engineering, Biology, Chemistry or MS Bioinformatics.

Grading: Letter Graded

Cross-listed with BIOL 123A / SE 123A. Computer Science is responsible for scheduling.

CS 123B - Bioinformatics II

3 unit(s)

Advanced Bioinformatics algorithms, tools, databases. Biological background; protein structure/function; sequencing technology; sequence identification; transcriptomics; metagenomics; CRISPR. Possible additional topics: functional genomics; protein networks; drug discovery; pathway analysis; immunoinformatics; analysis pipelines; machine learning applications. Project applying advanced approaches to real-world problems.

Prerequisite(s): CS 123A/BIOL 123A/SE 123A; Allowed Majors: Computer Science, Data Science, Software Engineering Biology, Chemistry or MS Bioinformatics.

Grading: Letter Graded

Cross-listed with BIOL 123B / SE 123B. Computer Science is responsible for scheduling.

CS 131 - Processing Big Data - Tools and Techniques

3 unit(s)

In-depth study of essential tools and techniques for processing big data over the UNIX operating system and/or other operating systems. On UNIX, it includes using grep, sed, awk, join, and programming advanced shell scripts for manipulating big data.

Prerequisite(s): CS 46B or BIOL 123B with a grade of C- or better. Allowed Declared Majors: Computer Science BS, Data Science BS, MS Bioinformatics (MS BI).

Grading: Letter Graded

CS 133 - Introduction to Data Visualization

3 unit(s)

Topics in data analysis and visualization. Covers tools and techniques to efficiently analyze and visualize large volumes of data in meaningful ways to help solve complex problems in fields such as life sciences, business, and social sciences.

Prerequisite(s): CS 146 with a grade of C- or better, or [CS 22B and graduate standing]. Computer Science, Data Science, Computer Science and Linguistics, or Software Engineering majors only.

Grading: Letter Graded

CS 134 - Computer Game Design and Programming

3 unit(s)

Architectures and object-oriented patterns for computer game design. Animation, simulation, user interfaces, graphics, and intelligent behaviors. Team projects using an existing game engine framework.

Prerequisite(s): CS 146 and either CS 151 or CMPE 135 (with a grade of "C-" or better in each); Allowed Majors: Computer Science, Applied and Computational Math, Software Engineering; or instructor consent
Grading: Letter Graded

Cross-listed with SE 134. Computer Science is responsible for scheduling.

CS 136 - Introduction to Computer Vision

3 unit(s)

Fundamental and advanced Computer Vision algorithms. Basic image processing techniques (image convolution, and region and edge detection). Complex vision algorithms for contour detection, depth perception, dynamic vision, and object recognition. Core topics (color processing, texture analysis, and visual geometry).

Prerequisite(s): CS 146, MATH 39, and CS 49C or equivalent (with a grade of "C-" or better in each).
Grading: Letter Graded

CS 143C - Numerical Analysis and Scientific Computing

3 unit(s)

Development and comparison of important algorithms for scientific computing in terms of efficiency, accuracy and reliability. Topics include nonlinear equations, interpolation, approximation theory, differentiation, integration, differential equations, numerical stability and error analysis. Substantial assignments using contemporary software packages and professional subprogram libraries.

Prerequisite(s): MATH 32 or MATH 32X, one of CS 22A, MATH 50, CS 46A, CS 49C or CS 49J, one of MATH 33A, MATH 33LA, or MATH 34 (with a grade of "C-" or better in each); or instructor consent.
Grading: Letter Graded

Cross-listed with MATH 143C / METR 143C. Mathematics and Statistics is responsible for scheduling.

CS 143M - Numerical Analysis and Scientific Computing

3 unit(s)

Development and comparison of important algorithms for scientific computing in terms of efficiency, accuracy and reliability. Topics include systems of linear equations-direct and iterative methods, least squares problems, eigenvalues and eigenvectors, numerical stability and error analysis. Substantial assignments using contemporary software packages and professional subprogram libraries.

Prerequisite(s): MATH 39, one of CS 22A, MATH 50, CS 46A or CS 49C (each with a grade of "C-" or better). Or instructor consent.
Grading: Letter Graded

Cross-listed with MATH 143M. Mathematics and Statistics is responsible for scheduling.

CS 144 - Advanced C++ Programming

3 unit(s)

Advanced features of C++, including operator overloading, memory management, templates, exceptions, multiple inheritance, RTTI, namespaces, tools.

Prerequisite(s): CS 46B and CS 49C (with a grade of C- or better in each), or equivalent knowledge of object-oriented programming and C, or instructor consent; Allowed Major: Computer Science only.

Grading: Letter Graded

CS 146 - Data Structures and Algorithms

3 unit(s)

Implementations of advanced tree structures, priority queues, heaps, directed and undirected graphs. Advanced searching and sorting techniques (radix sort, heapsort, mergesort, and quicksort). Design and analysis of data structures and algorithms. Divide-and-conquer, greedy, and dynamic programming algorithm design techniques.

Prerequisite(s): MATH 30, MATH 42, CS 46B, and [(CS 48 or CS 49J) if CS 46B was not in Java], each with a grade of C- or better; Computer Science, Applied and Computational Math, Forensic Science: Digital Evidence, Software Engineering, Data Science, Computer Science and Linguistics majors only; or instructor consent.

Grading: Letter Graded

CS 147 - Computer Architecture

3 unit(s)

Introduction to the basic concepts of computer hardware structure and design, including processors and arithmetic logic units, pipelining, and memory hierarchy.

Prerequisite(s): CS 47 or CMPE 102 (with a grade of "C-" or better), Computer Science or Forensic Science: Digital Evidence majors only.

Grading: Letter Graded.

CS 148 - Applied Algorithms II

1 unit(s)

Applying basic data structures to implement programs to solve problems. Emphasis on using the data structures and algorithms learned in CS 146. Students will be expected to write a Java program every week.

Prerequisite(s): CS 146.

Grading: Letter Graded.

CS 149 - Operating Systems

3 unit(s)

Fundamentals: Contiguous and non-contiguous memory management; processor scheduling and interrupts; concurrent, mutually exclusive, synchronized and deadlocked processes; parallel computing; files. Substantial programming project required.

Prerequisite(s): CS 47 or CMPE 102 (with a grade of "C-" or better), and CS 146 (with a grade of "C-" or better). Allowed Declared Majors: Computer Science, Applied and Computational Math, Forensic Science: Digital Evidence, or Software Engineering Majors only; or Instructor Consent.

Grading: Letter Graded

CS 151 - Object-Oriented Design

3 unit(s)

Design of classes and interfaces. Object-oriented design methodologies and notations. Design patterns. Generics and reflection. Exception handling. Concurrent programming. Graphical user interface programming. Software engineering concepts and tools. Required team-based programming assignment.

Prerequisite(s): MATH 42, CS 46B, and [(CS 48 or CS 49J) if CS 46B was not in Java], each with a grade of C- or better; Allowed Declared Majors: Computer Science, Applied and Computational Math, Software Engineering, or Data Science; or instructor consent.

Grading: Letter Graded

CS 152 - Programming Paradigms

3 unit(s)

Programming language syntax and semantics. Data types and type checking. Scope, bindings, and environments. Functional and logic programming paradigms, and comparison to other paradigms. Extensive coverage of a functional language.

Prerequisite(s): CS 151 or CMPE 135 (with a grade of "C-" or better); Computer Science or Software Engineering Majors only.

Grading: Letter Graded.

Cross-listed with SE 152. Computer Science is responsible for scheduling.

CS 153 - Concepts of Compiler Design

3 unit(s)

Theoretical aspects of compiler design, including parsing context free languages, lexical analysis, translation specification and machine-independent code generation. Programming projects to demonstrate design topics.

Prerequisite(s): CS 47 or CMPE 102, CS 146, and CS 154 (with a grade of "C-" or better in each); Allowed Major: Computer Science only; or instructor consent.

Grading: Letter Graded

Cross-listed with SE 153. Computer Science is responsible for scheduling.

CS 154 - Formal Languages and Computability

3 unit(s)

Finite automata, context-free languages, Turing machines, computability.

Prerequisite(s): MATH 42 or MATH 42X and CS 46B (with a grade of "C-" or better in each); Allowed Majors: Computer Science, Computer Science and Linguistics, or Software Engineering.

Grading: Letter Graded.

Cross-listed with SE 154. Computer Science is responsible for scheduling.

CS 155 - Introduction to the Design and Analysis of Algorithms

3 unit(s)

Algorithm design techniques: dynamic programming, greedy algorithms, Euclidean and extended Euclidean

algorithms, Discrete and Fast Fourier transforms. Analysis of algorithms, intractable problems and NP-completeness. Additional topics selected from: selection algorithms and adversary arguments, approximation algorithms, parallel algorithms, and randomized algorithms.

Prerequisite(s): CS 146 (with a grade of "C-" or better); Allowed Majors: Computer Science, Data Science, Computer Science and Linguistics, Applied and Computational Mathematics or Software Engineering; or instructor consent.

Grading: Letter Graded

CS 156 - Introduction to Artificial Intelligence

3 unit(s)

Basic concepts and techniques of artificial intelligence: problem solving, search, deduction, intelligent agents, knowledge representation. Topics chosen from logic programming, game playing, planning, machine learning, natural language, neural nets, robotics.

Prerequisite(s): CS 146 (with a grade of "C-" or better); Allowed Majors: Computer Science, Data Science, Computer Science and Linguistics, Applied and Computational Mathematics or Software Engineering; or instructor consent.

Grading: Letter Graded

Cross-listed with SE 156. Computer Science is responsible for scheduling.

CS 157A - Introduction to Database Management Systems

3 unit(s)

Relational data model. Relational algebra. Standard SQL. Design theory. Conceptual data modeling. Integrity constraints and triggers. Views and indexes. Transactions. Distributed data management. Interactive and programmatic interfaces to database systems. Application programming project using a prominent database system.

Prerequisite(s): CS 146 (with a grade of "C-" or better); Computer Science, Applied and Computational Math, Forensic Science: Digital Evidence, Software Engineering, Data Science, or Computer Science and Linguistics majors only; or instructor consent.

Grading: Letter Graded

CS 157B - Database Management Systems II

3 unit(s)

Survey course. Object-oriented data model, definition language, query language. Object relational database systems. Database trends like active, temporal, multimedia, deductive databases. Web database topics, namely, architectures, introduction to interface languages. Team projects.

Prerequisite(s): CS 157A (with a grade of "C-" or better); Computer Science, Applied and Computational Math, Forensic Science: Digital Evidence, or Software Engineering Majors only; or instructor consent.

Grading: Letter Graded

Cross-listed with SE 157B. Computer Science is responsible for scheduling.

CS 157C - NoSQL Database Systems

3 unit(s)

NoSQL Data Models: Key-Value, Wide Column, Document, and Graph Stores. CAP Theorem. Distribution Models. Current NoSQL Databases: Configuration and Deployment, CRUD operations, Indexing, Replication, and Sharding. Public Data Sets. API Coding and Application Development. NoSQL in the Cloud. Team Project.

Prerequisite(s): CS 157A with a "C- or better". Computer Science or Software Engineering majors only.

Grading: Letter Graded

CS 158A - Computer Networks

3 unit(s)

Introduction to computer networks, including network layered architectures, local and wide area networks, mobile wireless networks, Internet TCP/IP protocol suite, network resource management, network programming, network performance, network security, network applications.

Prerequisite(s): CS 146 and CS 47 (with grades of "C-" or better); Computer Science or Software Engineering majors only, or instructor consent.

Grading: Letter Graded

CS 158B - Computer Network Management

3 unit(s)

Principles and technologies of network management: reference models, functions (fault, configuration, performance, security and accounting management), management information, communication protocols, integration, and assessment. Network security and cyber defense: cryptography, key distribution, authentication protocols, network attacks, access control, and example systems.

Prerequisite(s): CS 158A or CMPE 148 (with a grade of "C-" or better); Allowed Majors: Computer Science, Software Engineering or Forensic Science: Digital Evidence; or instructor consent

Grading: Letter Graded

Cross-listed with SE 158B. Computer Science is responsible for scheduling.

CS 159 - Introduction to Parallel Processing

3 unit(s)

Major parallel architectures: shared memory, distributed memory, SIMD, MIMD. Parallel algorithms: techniques for scientific applications, measures of performance. Parallel programming: principles and implementations in various languages. Assignments on available parallel and vector computers.

Prerequisite(s): CS 146 (with a grade of "C-" or better); Computer Science, Applied and Computational Math, or Software Engineering Majors only; or instructor consent.

Grading: Letter Graded

CS 160 - Software Engineering

3 unit(s)

Software engineering principles, software process and process models, requirements elicitation and analysis, design, configuration management, quality control, project planning, social and ethical issues. Required team-based software development, including written requirements specification and design

documentation, oral presentation, and tool use.

Prerequisite(s): CS 146, CS 151 (with a grade of "C-" or better in each); CS 100W (with a grade of "C" or better) or instructor consent. Computer Science majors only.

Grading: Letter Graded

CS 161 - Software Project

3 unit(s)

A substantial project based on material from an advanced area of computer science. Includes lectures on the project topic and the design and testing of software systems. At least 50% of the course grade to be based on the project.

Prerequisite(s): CS 160 (with a grade of "C-" or better) or instructor consent. Computer Science and Software Engineering Majors only.

Grading: Letter Graded

CS 163 - Data Science Senior Project

3 unit(s)

Semester-long individual or team project. Apply knowledge and technology to solve a realistic data science problem, including the entire process of collecting and processing real-world data, applying suitable analytic methods, explaining analysis outcomes, and making appropriate recommendations.

Prerequisite(s): CS 100W, CS 131, and either CS 156 or CS 171.

Grading: Letter Graded

CS 166 - Information Security

3 unit(s)

Fundamental security topics including cryptography, authentication, access control, network security, security protocols, and software security. Networking basics are covered. Additional security topics selected from multilevel security, biometrics, blockchain, machine learning, information warfare, e-commerce, intrusion detection, system evaluation and assurance.

Prerequisite(s): CS 146 (with a grade of "C-" or better) and either CS 47 or CMPE 102 or CMPE 120 (with a grade of "C-" or better); Computer Science, Data Science, Computer Science and Linguistics, Applied and Computational Math, Forensic Science: Digital Evidence, or Software Engineering Majors only; or instructor consent.

Grading: Letter Graded

CS 168 - Blockchain and Cryptocurrencies

3 unit(s)

Cryptocurrencies and the blockchain. Centralized clearinghouse solutions vs. distributed consensus solutions. The blockchain and its validation approaches: proof-of-work, proof-of-stake, proof-of-storage, etc. Cryptocurrency wallets. Smart contracts.

Prerequisite(s): CS 166 (with a grade of C- or better). Computer Science or Software Engineering majors only, or instructor consent.

Grading: Letter Graded

CS 171 - Introduction to Machine Learning

3 unit(s)

Covers a selection of classic machine learning techniques including backpropagation and several currently popular neural networking and deep learning architectures. Hands-on lab exercises are a significant part of the course. A major project is required.

Prerequisite(s): CS 146 (with a grade of C- or better). Computer Science, Data Science, Computer Science and Linguistics, or Software Engineering majors only.

Grading: Letter Graded

CS 174 - Server-side Web Programming

3 unit(s)

Development and deployment of multi-tier web-based applications. Introduction to HTML, XML, enterprise design patterns, web services and database access.

Prerequisite(s): CS 46B (with a grade of "C-" or better); Allowed Majors: Computer Science or Software Engineering Majors.

Grading: Letter Graded

Cross-listed with SE 174. Computer Science is responsible for scheduling.

CS 175 - Mobile Device Development

3 unit(s)

Mobile Platform APIs including those for networking, touch, graphics, data, location, and camera. Testing and profiling on devices and emulators/simulators.

Prerequisite(s): CS 47, and knowledge of Java equivalent to that of CS 46A or CS 49J; Allowed Majors: Computer Science or Forensic Science: Digital Evidence.

Grading: Letter Graded

CS 176 - Introduction to Social Network Analysis

3 unit(s)

The Web and social networks are complex networks. We study them by unifying tools from different disciplines: computer science, economics, and social sciences. Topics include graph theory, information networks, search, advertisement, auctions.

Prerequisite(s): CS 146 (with a grade of C-); or instructor consent. Computer Science, Data Science, Computer Science and Linguistics, or Software Engineering majors only, or instructor consent.

Grading: Letter Graded

CS 180 - Individual Studies

1-3 unit(s)

Individual study in a specific field.

Prerequisite(s): Department chair consent. Not available to Open University Students

Grading: Credit/No Credit

CS 180H - Individual Studies for Honors

3 unit(s)

Senior project on advanced topics in computer science as determined by the instructor. Written paper or oral presentation of the project required. Intended for students graduating with departmental honors.

Prerequisite(s): At least junior standing as computer science major. GPA of 3.5 or higher in the major and department chair consent.

Grading: Credit/No Credit

CS 185A - Advanced Practical Computing Topics

1 unit(s)

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format and may be repeated for credit.

Prerequisite(s): Varies with topic

Grading: Credit/No Credit

CS 185C - Advanced Practical Computing Topics

3 unit(s)

Computing topics of current interest in industrial practice. Emphasis on effective use and integration of software/hardware. Different topics may be offered at different times in a short-course lecture/lab format and may be repeated for credit.

Prerequisite(s): Varies with topic; Allowed Majors: Computer Science or Data Science.

Grading: Letter Graded

CS 190 - Internship Project

1 unit(s)

Work on an approved semester-long paid project at an industrial site. Meet once per week on campus. Progress reports, oral presentations, final report, and evaluation by project supervisor will be used to demonstrate the acquisition of skills identified as goals prior to the start of the assignment.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): CS 146 (with a grade of "C-" or better) or graduate standing, selection by a company, and instructor consent

Grading: Letter Graded

CS 190I - Internship Project

3 unit(s)

Work on an approved semester-long paid project at an industrial site. Meet once per week on campus. Progress reports, oral presentations, final report, and evaluation by project supervisor will be used to demonstrate the acquisition of skills identified as goals prior to the start of the assignment.

Prerequisite(s): CS 146 (with a grade of "C-" or better) or graduate standing, selection by a company, and

instructor consent.

Grading: Letter Graded

CS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CS 200W - Graduate Technical Writing

3 unit(s)

Graduate technical writing workshop to develop advanced communication skills that will meet the professional needs of computer scientists, along with research methodologies and proper documentation for the master's thesis project.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing. Allowed Declared Major: Bioinformatics, Computer Science, Data Science, Mathematics, or Statistics. Or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program. This course does NOT satisfy the undergraduate GE Area Z requirement.

CS 216 - Physically Based Modeling for Computer Graphics

3 unit(s)

Course provides a physically based approach to creating realistic images and animation applicable to film, games and other industries. In a project-based approach, students will study the algorithms commonly used for animation and modeling in computer graphics. Course provides a physically based approach to creating realistic images and animation applicable to film, games and other industries. In a project-based approach, students will study the algorithms commonly used for animation and modeling in computer graphics.

Prerequisite(s): CS 116A with a grade of B or better, or its equivalent, or with permission from the instructor.

Grading: Letter Graded.

CS 218 - Topics in Cloud Computing

3 unit(s)

Topics in cloud computing, including distributed system models, virtual machines, virtualization, cloud platform architectures (IaaS, PaaS, SaaS), service-oriented architectures, cloud programming and software environments, peer-to-peer computing, ubiquitous cloud, cloud security and trust management.

Prerequisite(s): CS 149 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 223 - Advanced Bioinformatics

3 unit(s)

The course investigates algorithms for solving computational problems in bioinformatics, and the life processes underlying those algorithms. Metagenomics, bioinformatic machine learning, single-cell RNA sequencing, variant discovery. Possible additional topics: genome assembly, advanced phylogenetics, long-read sequencing, and structural bioinformatics.

Prerequisite(s): CS 123B / BIOL 123B / SE 123B. Allowed Declared Major: Computer Science, Bioinformatics, Data Science.

Grading: Letter Graded.

CS 224 - Next Generation Sequencing & Genome Assembly

3 unit(s)

Genomic concepts and methods with a focus on Next Generation Sequencing (NGS) are presented. The practice and methods of collecting, analyzing, and assembling DNA and RNA sequences using de novo and reference-based methods along with variant calling are also presented.

Prerequisite(s): BIOL 123B and MATH 162 or CS 156 or CS 171, or instructor consent. Graduate Standing. Allowed Declared Major: Computer Science, Bioinformatics, and Data Science.

Grading: Letter Graded/RP.

CS 225 - Topics in Sequence-based Machine Learning for Bioinformatics

3 unit(s)

A study of recent advances in machine learning methods with applications to solving sequence analysis problems in molecular biology. The methods examined include word embeddings, vector space representations, language models, and deep learning architectures. A substantial course project is required.

Prerequisite(s): BIOL 123B and MATH 162 or CS 156 or CS 171, or instructor consent. Graduate standing. Allowed Declared Major: MS Computer Science, MS Bioinformatics, MS Data Science.

Grading: Letter Graded

CS 235 - User Interface Design

3 unit(s)

Human-computer interaction principles. Direct manipulation, focus plus context, interaction history; interfaces for websites and website collections; usability testing; role of metaphors; case studies; advanced topics include information visualization, interfaces for collaboration, intelligent interfaces, and software agents.

Prerequisite(s): CS 130 or CS 116A, and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 247 - Advanced Computer Architecture

3 unit(s)

Advanced topics in vector architectures, including: pipelined architectures, dataflow computers, VLSI architectures, butterfly connections; bus and memory architectures; cache structures; hardware implementations of algorithms.

Prerequisite(s): CS 147, CS 149, and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 249 - Distributed Computing

3 unit(s)

Current issues in operating systems, including multiprocessor systems and distributed computing, networks, security and performance. Case studies of current operating systems.

Prerequisite(s): CS 149 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 251 - Obj Oriented Anlyls

3 unit(s)

Introduction to important concepts, activities, and artifacts of the analysis and design phases of object-oriented software development. Use of CASE tools, UML, and pattern catalogs to build requirements models, domain models, design models, and reusable frameworks for a variety of software systems.

Prerequisite(s): CS 160 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 252 - Advanced Programming Language Principles

3 unit(s)

Language design and paradigms, including concepts underlying functional, logic, object-oriented and parallel paradigms. Theoretical foundations, including lambda calculus, denotational and axiomatic semantics. Proofs of program correctness. Programming projects emphasizing different aspects of language design.

Prerequisite(s): CS 152 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 253 - Advanced Compiler Design

3 unit(s)

Review of attribute analysis and static semantic evaluation. Runtime environments and code generation. Basic blocks and flow graphs. Register allocation and storage classes. Common subexpression elimination and constant propagation. Loop optimizations. Global data flow analysis. Completion of a code optimization project.

Prerequisite(s): CS 153 and Graduate standing. Allowed Declared Major: Computer Science,

Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 254 - Theory of Computation

3 unit(s)

Models of computation; decidability; complexity measures; hierarchies; P, NP and other complexity classes; intractable problems.

Prerequisite(s): CS 154 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 255 - Design and Analysis of Algorithms

3 unit(s)

Randomized algorithms. Parallel algorithms. Distributed algorithms. NP-completeness of particular problems. Approximation algorithms.

Prerequisite(s): CS 155 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 256 - Topics in Artificial Intelligence

3 unit(s)

Introduction to topics in artificial intelligence such as problem solving methods, game playing, understanding natural languages, pattern recognition, computer vision and the general problem of representing knowledge. Students will be expected to use LISP.

Prerequisite(s): CS 156 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 257 - Database System Principles

3 unit(s)

Design management and performance issues on: file organization and access methods, buffer management and storage management. Query processing and query optimization, transaction management, recovery, and concurrency control techniques. Reliability, protection and integrity techniques. Extensive programming project.

Prerequisite(s): CS 157B and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 258 - Computer Communication Systems

3 unit(s)

Design, analysis and survey of the latest advancements in network and Internet technologies, such as supporting TCP/IP over various network media, software-defined networks, networks supporting cloud

computing, network security, peer-to-peer and overlay networks, and quality of services.

Prerequisite(s): CS 158A and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 259 - Advanced Parallel Processing

3 unit(s)

An advanced hardware architecture and software development class focused on multi-threaded, parallel processing algorithms and techniques. A study of high-performance parallel hardware architectures and parallel programming languages. Applications of parallel and GPU processing, including computer gaming.

Prerequisite(s): Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 262 - Randomized Algorithms and Applications

3 unit(s)

Design and analysis of algorithms which incorporate randomness in their design. Applications will be given in several of the following areas: data structures, pattern matching, cryptography, parallel computing, distributed computing, and interactive proof systems.

Prerequisite(s): CS 154 or CS 155, and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 265 - Cryptography and Computer Security

3 unit(s)

Security mechanisms for protecting information in computer systems and networks. Includes cryptography and its applications to security services in distributed systems, mathematics of cryptography, access control, protection models, security policies, design of secure systems, firewalls, and intrusion detection.

Prerequisite(s): CS 149 and CS 166, or instructor consent. Graduate standing. Allowed Declared Major: Computer Science MS, Bioinformatics MS, and Data Science MS.

Grading: Letter Graded

CS 266 - Topics in Information Security

3 unit(s)

Advanced topics in the area of information security. Content differs with each offering. Possible topics include, but are not restricted to: Network Security, Software Reverse Engineering and Cryptanalysis.

Prerequisite(s): CS 166 and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 267 - Topics in Database Systems

3 unit(s)

Advanced topics in the area of database and information systems. Content differs in each offering. Possible topics include though not restricted to: Data Mining, Distributed Databases and Transaction Processing.

Prerequisite(s): CS 157B and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 268 - Topics in Wireless Mobile Networking

3 unit(s)

Advanced topics in the area of wireless mobile networking. Content may differ in each offering. Possible topics include though not restricted to: wireless local and metropolitan area networks, mobile Internet, sensor networks, mobile computing, wireless network security. Repeatable when topic changes.

Prerequisite(s): CS 158A and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 271 - Topics in Machine Learning

3 unit(s)

Variable topics in machine learning. Content may include hidden Markov models, principal component analysis, support vector machines, clustering, boosting, random forests, neural networks, and deep learning. Relevant applications will be covered.

Prerequisite(s): CS 157A. Graduate standing. Allowed Declared Major: MS in Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 272 - Reinforcement Learning and Sequential Decision Making

3 unit(s)

Introduction to reinforcement learning, deep reinforcement learning, other online learning algorithms, and their applications.

Prerequisite(s): CS 157A. Allowed Declared Major: MS in Computer Science, Bioinformatics, Data Science.

Grading: Letter Graded

CS 273 - Topics in Natural Language Processing

3 unit(s)

Variable topics in Natural Language Processing. Content may include regression/classification model evaluation, text processing, spell correction, language models, sentiment classification, keyword search, and other NLP-based systems.

Prerequisite(s): Graduate standing. CS 156 or CS 171 or instructor consent.

Grading: Letter graded.

CS 274 - Topics in Web Intelligence

3 unit(s)

Topics in web intelligence including finding similar items, mining data streams, link analysis, frequent itemsets, advertising on the web, recommender systems, and mining social-network graphs. Relevant applications will be covered. Significant programming project is required.

Prerequisite(s): CS 157A and Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 276 - Machine Learning on Graphs

3 unit(s)

Graphs are a powerful way to model networks. Networks contain a plethora of valuable information about the underlying data of various scientific fields. Introduction to various network analysis and machine learning techniques to extract, analyze and visualize networks.

Prerequisite(s): CS 146

Grading: Letter graded.

CS 280 - Graduate Individual Studies

1-3 unit(s)

Individual study in specific field.

Prerequisite(s): Department chair consent. Not available to Open University Students

Grading: Credit/No Credit

CS 286 - Advanced Topics in Computer Science

3 unit(s)

Selected topics in computer science. Topics vary each semester and may be repeated for a maximum of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Suitable upper division background in mathematics and computer science as set by instructor. Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Letter Graded

CS 297 - Preparation for Writing Project or Thesis

3 unit(s)

Supervised individual research and project work to prepare for a master's writing project or thesis.

Prerequisite(s): Fully classified standing in the MS Computer Science, MS Bioinformatics, or MS Data Science program, department chair consent. Not available to Open University Students.

Grading: Credit/No Credit

CS 298 - Master's Writing Project

3 unit(s)

Prerequisite(s): CS 297 or CS 240, and department chair consent and advancement to candidacy for the MS degree. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

CS 298B - Bioinformatics Master's Project

3 unit(s)

Supervised individual research of an advanced character for the completion of the masters project.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Fully classified standing in the MS in Bioinformatics program and department chair consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

CS 299 - Master's Thesis

3 unit(s)

Prerequisite(s): CS 297 and Department Chair consent and advancement to candidacy for the MS degree. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

CS 1022AS - Support Course for CS 22A

1 unit(s)

Review of relevant background material prior to the corresponding content for CS 22A.

Misc/Lab: Activity 2 hours.

Corequisite(s): Required corequisite for enrollment category M-III and M-IV students in CS 22A.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

CS 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project beyond minimum required units, for cases in which final deliverables are still in progress.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): RP grade in a preceding thesis or project semester. Graduate standing. Allowed Declared Major: Computer Science, Bioinformatics, Data Science. Or instructor consent.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Counselor Education

EDCO 4 - Personal, Academic and Career Exploration

3 unit(s)

This course explores the concepts and applications of personal decision-making. Introduction to life-span development concepts through the use of self-assessment instruments and procedures. Orientation to San Jose State University.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

EDCO 4FY - Personal, Academic and Career Exploration

3 unit(s)

This course explores the concepts and applications of personal decision-making. Introduction to life-span development concepts through the use of self-assessment instruments and procedures. Orientation to San Jose State University.

Misc/Lab: 2 hours lecture/ 2 hours Lab

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

EDCO 10 - Adjunct Learning

1-2 unit(s)

Reading/writing/learning skills necessary for comprehension of textbooks and lectures in various disciplines; includes notetaking, exam preparation and library techniques. Not repeatable for graduation credit.

Grading: Credit/No Credit

EDCO 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

EDCO 180 - Individual Studies

1-3 unit(s)

Supervised study in specific fields of counselor education not covered by other courses.

Prerequisite(s): Program director consent.

Grading: Credit/No Credit

EDCO 215 - Introduction to Counseling and Guidance

3 unit(s)

Introduction to counseling and guidance research, theories, concepts, and competencies. Provides an overview of the related professional roles and settings.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

EDCO 218 - Counseling Process & Techniques

3 unit(s)

Foundational course in individual and small group counseling process, skills, and techniques. Examines the characteristics of an effective counselor, the role of the counselor in the counseling process, and fundamental counseling microskills and techniques.

Grading: Letter Graded

EDCO 221 - Research in Counselor Education

3 unit(s)

Exploration of research and evaluation in education and counseling. Research procedures, forms of evaluation, and data collection and analysis techniques are examined. Coursework focuses on the conceptualization and development of a research proposal.

Prerequisite(s): EDCO 215

Grading: Letter Graded

EDCO 227 - School-Family-Community Collaboration

3 unit(s)

Exploration of the socio-cultural and psychological dynamics influencing home, school, and community relations. To provide knowledge to collaborate effectively with diverse families, communities, and school personnel to support students' learning, achievement, and psychological well-being.

Grading: Letter Graded

EDCO 232 - Law & Ethics in Counseling

3 unit(s)

Examination of the professional ethical standards guided by the American School Counselor Association (ASCA) and American Counseling Association (ACA) codes of ethics. To explore local, state and federal laws relating to youth and child welfare, adults, and families.

Grading: Letter Graded

EDCO 244 - Cultural Perspectives in Counseling

3 unit(s)

Exploring, identifying, and broadening personal perspectives, with an emphasis on culture and diversity in the context of counseling. Raising awareness regarding multicultural diversity and social justice issues.

Prerequisite(s): EDCO 215, EDCO 218, EDCO 232, EDCO 248

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

EDCO 248 - Dynamics of Behavior and Development

3 unit(s)

Study of the dynamics of individual and group behavior over the lifespan. Specific study of selected personality and development theory and practices.

Grading: Letter Graded

EDCO 266 - Education and Career Planning

3 unit(s)

Study of theory and practice of educational and career planning. Includes sources, uses, evaluation and filing of educational and career information and procedures for working with both individuals and groups.

Grading: Letter Graded

EDCO 267 - Practicum in Lifespan and Career Development

1-3 unit(s)

Practicum in lifespan development and career planning with emphasis on the development of applied skills in career counseling. May be repeated for credit when an alternate focus is shown in the Schedule of Classes.

Prerequisite(s): Core curriculum.

Grading: Letter Graded

EDCO 268 - Lifespan Development

3 unit(s)

Examination of human development across the lifespan, through multiple theoretical and cultural perspectives, with a holistic integration of physical, cognitive, and socio-emotional aspects of development. To deepen knowledge to assist children, adolescents, and adults with life challenges.

Grading: Letter Graded

Cross-listed with GERO 268. Counselor Education is responsible for scheduling.

EDCO 279 - Advanced Group Process Theory and Practice

3 unit(s)

Focus on diverse theoretical approaches in group dynamics, group facilitation/leadership and the group as an instrument of learning within varying institutional settings.

Prerequisite(s): Core curriculum and instructor consent.
Grading: Letter Graded

EDCO 280 - Multicultural Counseling

3 unit(s)

Practical application of multicultural counseling theories and techniques. Examine and understand personal cultural perspectives; develop empathy and understanding of various community cultures.

Prerequisite(s): EDCO 215, EDCO 218, EDCO 232, EDCO 248, EDCO 266 and EDCO 244
Grading: Letter Graded

EDCO 282 - Assessment for Counselors

3 unit(s)

Exploration of the assessment and diagnostic process, including differential diagnosis and use of diagnostic tools including the current edition of the Diagnostic and Statistical Manual. Discuss development of pathology; applicable for use within educational and counseling agency settings.

Prerequisite(s): EDCO 215, EDCO 218, EDCO 232, EDCO 248
Grading: Letter Graded

EDCO 283 - Advanced Educational Assessment

3 unit(s)

Concept and practice in uses of standardized evaluative instruments in school and community. Emphasis on generating curriculum and guidance hypotheses for groups.

Prerequisite(s): Core curriculum.
Grading: Letter Graded

EDCO 285 - Trauma Counseling & Crisis Intervention

3 unit(s)

Advanced seminar addressing cognitive, affective, behavioral, physiological, and interpersonal effects of trauma. To learn to assess and respond to crises as well as brief and long-term counseling interventions for individuals and groups in K-12, higher education, and agency settings.

Prerequisite(s): EDCO 215, EDCO 218, EDCO 232, EDCO 248, EDCO 266, EDCO 282
Grading: Letter Graded

EDCO 286 - Organizational Change and Development

3 unit(s)

Examination of organizational change within educational and community settings. To develop knowledge and increase skills in using institutional change strategies and innovations in various settings. Concepts and skills are applied through the design and planning of a change intervention.

Prerequisite(s): EDCO 215, EDCO 218, EDCO 232, EDCO 248, EDCO 266, and EDCO 282
Grading: Letter Graded

EDCO 287 - Comprehensive School Counseling Analysis

3 unit(s)

Examination of the planning, development, organization, and evaluation of comprehensive K-12 school counseling programs based on national standards. Coursework is designed to increase effective use of data and technology to promote students' academic, career, and personal/social development. Hybrid course format.

Prerequisite(s): EDCO 227

Grading: Letter Graded

EDCO 288 - Seminar in Counseling Theory and Practice

3 unit(s)

Assists students in the clarification of philosophical and psychological theory and develops a consistent individual and group counseling theory in relation to a defined lifestyle and the study of practice in school and agency settings.

Prerequisite(s): Core curriculum in the Counseling and Guidance MA or K-12 School Counseling Credential.

Corequisite(s): EDCO 280.

Grading: Letter Graded

EDCO 289 - Seminar in Professional Counseling

3 unit(s)

A culminating seminar which emphasizes a critical review and critique of theory and research in application of human development specialties. May be repeated for credit when an alternate focus is shown in the Schedule of Classes.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

EDCO 292 - Supervised Experience in Counseling

3-6 unit(s)

Supervised field experience in guidance and counseling. Assignments to public schools or agencies.

Prerequisite(s): Core curriculum.

Grading: Credit/No Credit/Incomplete.

EDCO 293 - Practicum in Child and Substance Abuse

3 unit(s)

A practicum in peer group systems and psychodrama counseling intervention for treatment of addiction, physical and sexual abuse, teen pregnancy and other at-risk groups. Required participation in a peer group counseling process.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

EDCO 294 - Practicum in Self-Development

3 unit(s)

Facilitates training in individual and group counseling methods, including transpersonal journal, psychodrama and peer group techniques.

Grading: Letter Graded

EDCO 298 - Special Studies in Counselor Education

3 unit(s)

Supervised study for master's degree counselor education candidates with a final course product that satisfies the department and university Plan B requirement.

Prerequisite(s): EDCO 215 and EDCO 221

Grading: Mandatory Credit/No Credit/RP

EDCO 299 - Master's Thesis

3 unit(s)

Supervised thesis in the field of counseling and guidance.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Advanced to candidacy, satisfactory completion of EDCO 221 advisor/designated faculty consent

Grading: Mandatory Credit/No Credit/RP

Creative Arts

CA 60 - Creativity Matters

3 unit(s)

Study why creativity matters to you from imagining possible career paths to improving communication, expressing ideas, and flourishing over the course of one's lifetime. Creativity is not just for artists and inventors! It is a human faculty that matters for life.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

CA 70 - Visual & Media Arts for K-8 Teachers

3 unit(s)

Introductory and interdisciplinary course in the Visual Arts and Media Arts designed for students interested in teaching in K-8 classrooms. Basic techniques and processes a prospective teacher needs in the Visual Arts and Media Arts to instruct students. Students actively engage in the art forms as well as explore standards-based instructional strategies, classroom management strategies, and aesthetic inquiry. Introduction to Arts Education research, advocacy, and community arts resources.

Grading: Letter Graded

CA 75 - Performing Arts for K-8 Teachers

3 unit(s)

Basic dance, theatre, and music techniques and processes a prospective teacher needs to create dance/movement, vocal and instrumental music, creative dramatics and formal theatre with K-8 students. Students actively engage in the three arts disciplines, as well as explore standards-based instructional strategies, classroom management strategies, and aesthetic inquiry. Students are introduced to Performing Arts Education research, advocacy, and community arts resources.

Grading: Letter Graded

CA 95 - Introduction to Queer Arts

3 unit(s)

Exploration of the ways that LGBTQ individuals and groups have used the arts, in various times and places, to make their lives, communities, and selves meaningful and to resist the domination of non-queer cultures.

Satisfies C1: Arts.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

CA 134 - Religion Film & Media

3 unit(s)

Depictions of religion, religions, religious behavior, and religious propaganda in film and media. Exploring these from several perspectives, (e.g. emic and etic, cross-national, aesthetic) and examining the murky problem of "the truth" in the depiction of religious and spiritual experience.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with HUM 134 / RELS 134. Humanities is responsible for scheduling.

CA 139 - Teaching Diversity through Art

3 unit(s)

Strategies for teaching ideas of diversity through art in the preschool through high school classroom. Students deepen their understanding of culture and context and of why the arts matter.

Misc/Activity: 6 hours activity

Prerequisite(s): upper-division standing or instructor consent

Grading: Letter Graded

Cross-listed with ART 139. Art and Art History is responsible for scheduling.

Sustainability Related - SDG 4: Quality Education

CA 148 - Voice & Movement for Performance

3 unit(s)

Explores the expressive, restorative and communicative nature of movement and voice as applied to human performance, the arts, therapy, education and management. Techniques focus on students developing their "natural voice" and exploring elements of physical expression by examining how the body can communicate story. Course content may change each semester and be tailored to be more advanced for those students repeating the course.

Lecture 2 hours/lab 3 hours.

May be repeated 2 times for up to 6 units.

Corequisite(s): TA 48 or upper division standing.

Grading: Letter Graded

Cross-listed with TA 148. Film and Theatre is responsible for scheduling.

CA 150 - Field Experience in the Arts

3 unit(s)

Provides opportunities for those considering teaching, K-12 levels, to interact with outstanding teachers of the arts in the region through structured field experiences in classrooms, reflective writing, community service, and weekly discussion in a seminar setting.

Prerequisite(s): ART 138 or ART 139, upper division standing, or instructor consent.

Grading: Letter Graded

Cross-listed with ARED 150. Art and Art History is responsible for scheduling.

CA 172 - The Arts in U.S. Society

3 unit(s)

Study of American arts and artists in their aesthetic, social, and political contexts, focusing on 20th and 21st centuries. Arts examined may include architecture, poetry, music, visual arts, dance, theatre, performance art, and fiction. Special emphasis on issues of cultural diversity and social justice.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENGL 172 / MUSC 172 / TA 172. Humanities is responsible for scheduling.

Sustainability Related - SDG 10: Reduced Inequalities

CA 173 - Thinking About Contemporary World Arts

3 unit(s)

An interdisciplinary investigation of the connections between the contemporary arts and global cultures. Use of critical and creative thinking to develop global understanding and to explore personal and cultural identities.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENGL 173 / MUSC 173 / TA 173. Humanities is responsible for scheduling.

CA 175 - Seminar in Creative Process

3 unit(s)

An exploration of the creative process across the creative domains and of the use of practice-based research in the humanities and creativity studies.

Prerequisite(s): CA 60 or upper division standing

Grading: Letter Graded

CA 176 - Creativity and Creative Leadership

3 unit(s)

Relationships among creativity, the arts, and leadership. Contemporary theories of creativity applied to the study of leadership within education, the arts, and social change through exploration of research, role models, and case studies. Application of relevant theories of creativity and leadership through collaborative projects, participant observation, or critical analysis of theories in practice.

Grading: Letter Graded

CA 177 - Interdisciplinary Arts for Teaching

3 unit(s)

Creativity in teaching and learning—a course designed for prospective teachers; connections between the various arts disciplines, integrating other core subjects taught in California's classrooms.

Grading: Letter Graded

Sustainability Related

CA 178 - Senior Seminar in Creative Arts

3 unit(s)

A capstone seminar in two sections. First, students present and facilitate discussion of a major book or topic in creative arts or, when appropriate, humanities. Second, students devote themselves to senior projects (a written thesis or work in other media).

Prerequisite(s): CA 172 or CA 173.

Grading: Letter Graded

CA 180 - Individual Studies

1-4 unit(s)

Individual work on special topics, by arrangement.

Prerequisite(s): Coordinator approval.

Grading: Credit/No Credit

Note(s): ["Mixed Grading"].

CA 190 - Field Work/Internship

1-3 unit(s)

Pre-professional experience in arts management/program design/implementation in a public setting.

Prerequisite(s): Coordinator approval.

Grading: Credit/No Credit

CA 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 6 units.

Grading: Mixed Grading

CA 194 - Community Building through Arts Orgs

3 unit(s)

In-depth study of strategies and methods for building community through creative arts organizations, both for-profit and non-profit.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

Dance

DANC 10 - Dance Appreciation

3 unit(s)

A survey of dance as art in the Western world. The course examines the diversity of people, cultures and events that led to the development of Ballet, Modern, Jazz, Tap and Musical Theatre Dance.

Satisfies C1: Arts.

Grading: Letter Graded

DANC 12 - Ensemble Dance Rehearsal and Performance

2 unit(s)

ENS: Training and performance experience in the field of dance. Fully-staged productions of original professional choreographic works.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

DANC 40A - Topics in Modern Dance I

2 unit(s)

Training experience in the field of beginning modern dance with varied topics. Can be repeated when topic changes.

Misc/Lab: Activity 4 hours.

Satisfies PE: Physical Education.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

Cross-listed with KIN 40A. Film and Theatre is responsible for scheduling.

DANC 41A - Topics in Ballet I

2 unit(s)

Training experience in the field of beginning ballet dance with varied topics. Can be repeated when topic changes.

Misc/Lab: Activity 4 hours.

Satisfies PE: Physical Education.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

Cross-listed with KIN 41A. Film and Theatre is responsible for scheduling.

DANC 42A - Topics in Jazz Dance I

2 unit(s)

Training experience in the field of beginning Jazz dance with varied topics. Can be repeated when topic changes.

Misc/Lab: Activity 4 hours.

Satisfies PE: Physical Education.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

Cross-listed with KIN 42A. Film and Theatre is responsible for scheduling.

DANC 43 - Dance Improvisation

1 unit(s)

Introduction to dance improvisation, developing skills in creativity in preparation for DANC 145A.

Prerequisite(s): Intermediate technique standing and permission of instructor.

Grading: Letter Graded

DANC 45A - Beginning Lindy Hop and Night Club Swing

1 unit(s)

This course is focused on the development of fundamental Swing dance skills and knowledge. Steps, technique, and styling will be drawn from Lindy Hop, Jitterbug, Street Swing, Jive and Triple-Time Swing dances.

Satisfies PE: Physical Education.

Grading: Letter Graded

Cross-listed with KIN 45A. Kinesiology is responsible for scheduling.

DANC 46A - Beginning Social Dance

1 unit(s)

This course is focused on the development of fundamental social dance skills and knowledge. Dances will be selected from the American Smooth (e.g. Waltz, Tango), American Rhythm (e.g. Rumba, Cha Cha) and night club (e.g. Hustle, West Coast Swing) dance categories.

Satisfies PE: Physical Education.

Grading: Letter Graded

Cross-listed with KIN 46A. Kinesiology is responsible for scheduling.

DANC 48A - Beginning Latin Dance

1 unit(s)

This course is focused on the development of fundamental Latin dance skills and knowledge. Dances will be selected from the International Latin, American Rhythm (e.g. Rumba, Cha Cha) and night club (e.g. Salsa) dance categories.

Satisfies PE: Physical Education.

Grading: Letter Graded

Cross-listed with KIN 48A. Kinesiology is responsible for scheduling.

DANC 49A - Topics in Tap Dance I

1 unit(s)

Training and experience in the field of beginning tap dance with varied topics. Can be repeated when topic changes.

Misc/Lab: Activity 3 hours.

Satisfies PE: Physical Education

Course may be repeated for credit for up to 2 units.

Grading: Letter Graded.

Cross-listed with KIN 49A. Film and Theatre is responsible for scheduling.

DANC 51A - Dance Production

3 unit(s)

Practical experience in technical aspects of producing a dance concert.

Misc/Lab: Lecture 1 hour/activity 3 hours.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

DANC 51B - Topics in Dance Crewing

0.5 unit(s)

The purpose of this course is to apply practical application of skills in dance production.

Course may be repeated for credit for up to 1 units.

Grading: Credit/No Credit

DANC 53 - World Dance

1 unit(s)

Traditional or theatrical dance forms selected from one or at the most two specific cultures. Classical ballet, modern, jazz, and tap dance are excluded.

Misc/Lab: Activity 3 hours.

Prerequisite(s): Level II technique standing.

Grading: Letter Graded.

DANC 54 - Topics in Dance Technique II

3 unit(s)

Beginning/Intermediate Dance with varied topics.

Satisfies PE: Physical Education

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Audition or Instructor Consent

Grading: Letter Graded

DANC 75 - Rhythm and Dynamics in Dance

1 unit(s)

Basic music theory and the relationship of dance and music.

Misc/Lab: Activity 2 hours.

Grading: Letter Graded

DANC 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 6 units.

Grading: Mixed Grading

DANC 102 - Dance in World Cultures

3 unit(s)

Survey of dance in selected world cultures; the role of dance in society; consideration of style, historical background and religious/cultural influences. Included are: Caribbean, West African, Mexican, Balkan, European, Asian and American cultures.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

DANC 112 - ENS: Dance Rehearsal and Performance

2 unit(s)

ENS: Training and performance experience in the field of dance. Fully-staged productions of original professional choreographic works of varying styles.

Misc/Lab: Lab hours required.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Audition and instructor consent

Grading: Credit/No Credit

DANC 144A - Dance History and Repertory

3 unit(s)

History of dance and dances from ancient time to the court of King Louis XIV. Selected repertory works.

Misc/Lab: Lecture 2 hours/activity 3 hours.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

DANC 145A - Choreography I

3 unit(s)

Presentation and criticism of solo choreography; introduction to improvisational techniques.

Misc/Lab: Activity 4 hours.

Prerequisite(s): DANC 43 and Audition.

Grading: Letter Graded

DANC 145B - Choreography II

3 unit(s)

Styles; forms; use of improvisation; presentation and criticism of small group dance.

Misc/Lab: Activity 4 hours.

Prerequisite(s): DANC 145A and Audition.

Grading: Letter Graded

DANC 145C - Choreography III

3 unit(s)

Practical application of external style in relationship with art from tribal to contemporary times. Concepts, styles and forms of modern dance in the twentieth century.

Misc/Lab: Activity 4 hours.

Prerequisite(s): DANC 145B and Audition.

Grading: Letter Graded

DANC 147A - Dance Seminar

3 unit(s)

Course geared toward the understanding of a broader perspective of the Art of Dance with emphasis on current trends, development of personal artistic statement and introductory teaching techniques.

Prerequisite(s): Senior standing and completion or concurrent enrollment in DANC 144A and/or DANC 144B .

Grading: Letter Graded

DANC 148 - Children's Dance

3 unit(s)

Study of dance for children as personal expression through movement. Use of creative dance as a tool for the enrichment of learning. Experiencing dance in a variety of cultures.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with HUM 148. Film and Theatre is responsible for scheduling.

DANC 150A - Kinesiology I

3 unit(s)

This course is designed to help provide the dancer with essential information about structure and function of the human body and the achievement of optimal performance through the science of human motion.

Misc/Lab: Lecture 2 hours/lab 2 hours.

Grading: Letter Graded

DANC 150B - Kinesiology II

3 unit(s)

This course is designed to help provide the dancer with essential information about injury prevention and introduce active somatic techniques to increase muscular efficiency, balance and overall awareness of the body.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): DANC 150A.

Grading: Letter Graded

DANC 151 - Introduction to Dance Pedagogy

2 unit(s)

Examines methods and modes of teaching dance as an art form, and embodied practice for producing and constructing knowledge and as movement research. Course investigates both theory and practice with concentrated focus on experiential, relational and holistic learning modes.

Misc/Lab: 1 hour lecture/ 2 hours activity

Prerequisite(s): DANC 54 and instructor approval
Grading: Letter Graded

DANC 154A - Topics in Dance Technique III

3 unit(s)
Intermediate/advanced dance with varied topics.

Satisfies PE: Physical Education

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Two semesters of DANC 54 or by Audition.
Grading: Letter Graded

DANC 154B - Topics in Dance Technique IV

3 unit(s)
Advanced Dance with varied topics.

Satisfies PE: Physical Education

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Two semesters of DANC 154A or by Audition.
Grading: Letter Graded

DANC 192 - International Program Studies

1-12 unit(s)
Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

DANC 194 - Dance Repertory Activity

1 unit(s)
Training and performance experience in the field of dance. Fully-staged productions of original student choreographic works. Can be repeated up to 12 times when repertory changes.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): DANC 51A or instructor consent.
Grading: Mandatory Credit/No Credit/RP

DANC 198 - Internship in Dance

1-3 unit(s)

Supervised internship with approved dance organization. Written evaluation submitted by organizations and student after field work.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

Data Analytics

DATA 200 - Computational Programming for Data Analytics

3 unit(s)

Computational thinking and problem solving; data structures, algorithms, iterations, functions, and other core concepts; standard libraries; functional programming and object-oriented programming; applications to data processing, data analytics, data visualization, and database manipulation.

Prerequisite(s): Admission into MS in Data Analytics and graduate advisor consent.

Grading: Credit/No Credit.

DATA 201 - Database Technologies for Data Analytics

3 unit(s)

File organization and storage structure, database system architecture, entity relationship model, normalization techniques, SQL, relational algebra, storage organization, query processing, and concurrent control.

Prerequisite(s): Admission into MS in Data Analytics and graduate advisor consent.

Grading: Credit/No Credit.

DATA 202 - Mathematics for Applied Data Science

3 unit(s)

Mathematical and statistical methods for applied data science; selected topics from probability, descriptive statistics, linear algebra, and calculus principles; programming for numerical implementation of mathematical and statistical methods.

Prerequisite(s): Admission into MS in Data Analytics and graduate advisor consent.

Grading: Credit/No Credit.

DATA 220 - Mathematical Methods for Data Analytics

3 unit(s)

Advanced Mathematical and statistical methods for data analytics, machine learning, and time series analysis; selected topics from probability, statistics, linear algebra, and mathematical optimization; programming for numerical implementation of mathematical and statistical algorithms.

Prerequisite(s): Admission into MS in Data Analytics and graduate advisor consent.

Grading: Letter Graded.

DATA 225 - Database Systems for Analytics

3 unit(s)

Design operational and analytical databases with relational, dimensional, and NoSQL data models; deploy data analytics applications with SQL programming and data access APIs; perform data cleansing, extract, transform, and load (ETL) operations for data warehouses and online analytical processing (OLAP).

Prerequisite(s): Admission into MS in Data Analytics and graduate advisor consent.

Grading: Letter Graded.

DATA 226 - Data Warehouse and Pipeline

3 unit(s)

Design analytical databases with dimensional and NoSQL data models; deploy data analytics applications with SQL programming; perform data cleansing, extract, transform, and load (ETL) operations for data warehouses; build data pipeline; and perform online analytical processing (OLAP).

Prerequisite(s): Admission into MSDA program and graduate advisor consent.

Grading: Letter graded.

DATA 228 - Big Data Technologies and Applications

3 unit(s)

Leverage emerging big data systems, technologies, and applications to transform data into knowledge through capturing, managing, analyzing, and understanding large data at volumes and rates; design analytical solutions in data warehouse, big data databases, data streaming, security and governance.

Prerequisite(s): DATA 230 (with a C or better grade).

Grading: Letter Graded.

DATA 230 - Business Intelligence and Data Visualization

3 unit(s)

Learn data visualization as an analytical tool and interactive dashboards; apply theories and design principles in the development of business intelligence and visualizations; and create data dashboards using BI tools, software packages, and environments.

Prerequisite(s): Admission into MS in Data Analytics and graduate advisor consent.

Grading: Letter Graded.

DATA 236 - Distributed Systems for Data Engineering

3 unit(s)

Learn big data distributed systems, large scale distributed systems framework, distributed messaging framework, distributed system building with cloud technologies, and REST (Representational State Transfer) service development and deployment.

Prerequisite(s): DATA 226 (with a C or better grade).

Grading: Letter graded.

DATA 240 - Data Mining and Analytics

3 unit(s)

Learn concepts, tools, and algorithms for data mining, statistical modeling, implementation techniques, and applications of data mining with a focus on data mining functions: pattern discovery, cluster analysis, exploratory data analysis, and anomaly detection with real-world examples.

Prerequisite(s): DATA 225 (with a C or better grade).

Grading: Letter Graded

DATA 245 - Machine Learning Technologies

3 unit(s)

Learn concepts, techniques and algorithms in machine learning for the development of real-world applications; build, evaluate and refine machine learning models to predict patterns from trained data sets; apply supervised and unsupervised learning methodologies in solving classification and regression problems.

Prerequisite(s): DATA 220 (with a "C" or better grade).

Grading: Letter Graded.

Note(s): This course satisfies graduate-level GWAR in this master's program. This course does NOT satisfy the undergraduate Writing in the Disciplines (WID) requirement.

DATA 250 - Large Scale Data Analytics

3 unit(s)

Learn and apply data analytics technologies and processes to large amount of data in various application domains; technologies include big data analytics algorithms, process and solutions, technology platforms, and data repositories; processes include validation, cleaning, preprocessing, and visualization.

Prerequisite(s): DATA 245 (with a "C" or better grade).

Grading: Letter Graded.

DATA 255 - Deep Learning Technologies

3 unit(s)

Study deep learning theory, techniques and technologies; implement neural networks using deep learning frameworks to solve problems in various application domains; build convolutional networks for image recognition, recurrent networks for sequence generation, and generative adversarial networks for image generation.

Prerequisite(s): DATA 228 and DATA 245 (with a "C" or better grade).

Corequisite(s): DATA 265 or DATA 266.

Grading: Letter Graded.

DATA 260 - Applied Intelligent Systems

3 unit(s)

Apply modern computational intelligent techniques, methodologies, tools and environments to develop integrated systems for solving practical problems; incorporate development processes, architectures, smart components, models and algorithms in building intelligent systems; perform integration, operations, management and evaluation tasks of intelligent systems.

Prerequisite(s): DATA 245 (with a "C" or better grade).

Grading: Letter Graded.

DATA 265 - Large Language Model Applications

3 unit(s)

Learn fundamentals of language models, application of large language models, entity recognition, including the use of prompt engineering, LangChain, advanced features of ChatGPT, and fine tuning of Large Language models and their applications.

Prerequisite(s): DATA 240 (with a C or better grade) and DATA 245 (with a C or better grade).

Corequisite(s): DATA 255.

Grading: Letter graded.

DATA 266 - Generative Model Applications

3 unit(s)

Learn application of generative models, including auto encoders, generative adversarial network, latent and stable diffusion, large language models, and generative model applications, including the use of prompt engineering and advanced features of ChatGPT.

Prerequisite(s): DATA 236 (with a C or better grade) and DATA 245 (with a C or better grade).

Corequisite(s): DATA 255.

Grading: Letter graded.

DATA 270 - Data Analytics Processes

3 unit(s)

Data analytics processes to complete project lifecycle; project scope, requirements and management; data planning and exploration; model selection, development and presentation; results evaluation and visualization; planning and analyzing processes of data analytics projects through case studies of various domains.

Prerequisite(s): DATA 225 or DATA 226 (both with a "C" or better grade).

Grading: Letter Graded.

DATA 292 - Special Topics in Data Analytics

1-3 unit(s)

Special topics in Data Analytics. Content varies from semester to semester. Repeatable in different topic areas.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Graduate advisor consent.

Grading: Letter Graded.

DATA 294 - Data Analytics Seminar

3 unit(s)

Advanced and domain specific topics in the area of data analytics; content is updated in each offering; possible topics include though not restricted to research design and data analytics for the applications of business, engineering, natural science, social science, etc.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Letter Graded

DATA 295 - Special Problems in Data Analytics

1-3 unit(s)

Advanced individual work in data analytics. Repeatable in different problem areas.

Course is repeatable for credit up to 6 units.

Prerequisite(s): Graduate advisor consent.

Grading: Letter Graded.

DATA 297 - Data Analytics Internship

1 unit(s)

Fieldwork for MS in Data Analytics students. A report is required at the end of the semester addressing the goals set at the start of the assignment.

Prerequisite(s): Completed 12 units degree required courses, classified status, in good standing, and graduate advisor consent

Grading: Credit/No Credit

DATA 298A - MSDA Project I

3 unit(s)

Comprehensive plan and preliminary design of data analytics project; integration of knowledge in technologies, processes and management to support program outcomes.

9 hours lab.

Prerequisite(s): Classified status, good standing, DATA 228 (with a C or better grade), DATA 245 (with a C or better grade), satisfied GVAR, completed 12 units of MSDA courses, and graduate advisor consent.

Grading: Letter Graded/Incomplete.

DATA 298B - MSDA Project II

3 unit(s)

Completion of an in-depth project to achieve the program outcomes and satisfy the culminating experience; write a detailed project report; make a comprehensive presentation and demonstration.

Prerequisite(s): Advancement to candidacy, DATA 298A, and graduate advisor consent.

Grading: Letter Graded/RP.

DATA 299A - MSDA Thesis I

3 unit(s)

First of a two-course sequence for the Plan A (Thesis) culminating experience.

Prerequisite(s): Classified status, good standing, DATA 228 (with a C or better grade), DATA 245 (with a C or better grade), satisfied GVAR, completed 12 units of MSDA courses, and graduate advisor consent.

Grading: Credit/No Credit/Incomplete.

DATA 299B - MSDA Thesis II

3 unit(s)

Second of the two-course sequence for the Plan A (Thesis) culminating experience.

Prerequisite(s): Advancement to candidacy, DATA 299A, and graduate advisor consent.

Grading: Mandatory Credit/No Credit/RP

Design

DSGN 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Satisfies D: Social Sciences.

Grading: Mixed Grading.

DSGN 100W - Writing Workshop: Design

3 unit(s)

Advanced writing course for design majors, based upon philosophical issues and current professional practices in design. Clear analytical and critical writing in examination of these topics.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); Completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GVAR).

DSGN 101 - Design Thinking Studio

3 unit(s)

Through iterative design sprints, practicing the design phases of Empathize, Define, Ideate, Prototype, and Test, students learn the fundamentals of human-centered design. Through techniques such as observation, interviewing, empathy mapping, usability testing, and competitive product analysis students develop expertise in keeping individuals' and communities' needs and goals at the center of the design process.

Activity 6 hours.

Grading: Letter Graded.

DSGN 127 - Internship

1-4 unit(s)

Experience in the methods and procedures employed by professional designers in consulting offices and corporate design departments. Professional responsibilities in local design offices on a weekly basis. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Completion of 3 units of DSIT 104, DSGD 186, or DSID 123, with GPA in major of at least 3.0, or instructor consent.

Grading: Credit/No Credit

DSGN 148 - Introduction to Spatial Visualization Technology in Urban Planning

1-4 unit(s)

Lab-based course in digital visualization for urban spatial representation using industry standard software such as Adobe Photoshop, Adobe Illustrator and Trimble Sketch-Up.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 148. Urban and Regional Planning is responsible for scheduling.

DSGN 180 - Individual Studies

1-3 unit(s)

Special topics or projects by arrangement with faculty.

Prerequisite(s): Art and design majors with upper division standing.

Grading: Credit/No Credit

DSGN 192 - International Program Studies

1-14 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International

Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Art and Art History is responsible for scheduling.

DSGN 197 - BA Senior Project

3 unit(s)

In-depth study of current issues in the design fields. Utilizes interdisciplinary approaches and concepts to provide a capstone experience for the design studies student.

Activity 6 hours.

Prerequisite(s): DSGD 99 and DSGD 100. Allowed Declared Majors: BA Design Studies, Concentration in Graphic Design.

Grading: Letter Graded

DSGN 200W - Professional Writing in Design

4 unit(s)

Introduction to a variety of advanced writing formats based in professional and academic practices.

Satisfies Graduation Writing Assessment Requirement (GWAR).

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Letter graded.

Note(s): This course satisfies graduate-level GWAR in this master's program.

DSGN 201 - Graduate Seminar in Design

4 unit(s)

Examination of critical theories and their relation to design practice in experience design and animation. Also explores a variety of broad themes and approaches within the field of experience design and animation.

May be repeated for credit for up to 8 units.

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 203 - Contextual Studies

4 unit(s)

Students will gain a broad understanding of design and animation, past and present, to inspire and inform projects of their own.

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 210 - Graduate Studio: Experience Design

4 unit(s)

Students will engage in various design methodologies and approaches related to experience design as they develop a design project.

May be repeated for credit for up to 8 units.

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 211 - Design Research Methodologies

4 unit(s)

Introduces students to the advanced concepts and skills of design research methodologies, with an emphasis placed on how these can be applied to address real-world problems.

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 212 - Human Dimensions in Experience Design

4 unit(s)

Study and application of human factors and participatory, or co-design, theory, including the development of an advanced design project that involves user, or stakeholder, participation and addresses a complex problem within the studio setting.

May be repeated for credit for up to 8 units.

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 213 - Designing with Data & Emergent Technology

4 unit(s)

Introduction to a variety of approaches to the application of data and emerging technologies within the design process.

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 248 - Spatial Visualization Tech in Urb Plan

1-4 unit(s)

Lab-based course in digital visualization for urban spatial representation using industry standard software such as Adobe Photoshop, Adobe Illustrator and Trimble Sketch-Up.

Grading: Letter Graded

Cross-listed with URBP 248. Urban and Regional Planning is responsible for scheduling.

DSGN 280 - Professional Practices

4 unit(s)

Students will engage in one of the following types of pre-approved professional practice and/or mentorship activities: (1) an advanced student-mentor creative project; (2) a professional internship; or (3) a teaching assistantship.

May be repeated for credit for up to 8 units.

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Credit/No Credit.

DSGN 291 - Pre-Proposal

4 unit(s)

Graduate students will develop a proposal for their master's project.

Prerequisite(s): Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 292 - Proposal

4 unit(s)

Graduate students will develop a final proposal for their project, including a thoughtful project description, a question/problem that the project aims to address, a research itinerary, initial schedule, list of collaborators or consultants, initial bibliography, and a formal presentation.

Prerequisite(s): DSGN 201, DSGN 291. Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 293 - Special Study

4 unit(s)

Advanced individual research in areas related to the graduate student's Master-level creative project.

May be repeated for credit for up to 16 units.

Prerequisite(s): DSGN 291. Master of Design (M.Des) students only.

Grading: Letter graded.

DSGN 298 - Master's Project

4 unit(s)

Students work with an approved faculty chair and committee to execute, publicly exhibit, and defend the merits of their Master's project.

Prerequisite(s): DSGN 292. Master of Design (M.Des) students only.

Grading: Credit/No Credit/RP.

Early Start Program English

ESE 1001 - Introduction-College Reading and Composition

1-2 unit(s)

This rhetoric-based course introduces students to the demands of college-level expository, analytical, and argumentative reading and writing. Students will study the relationships between authorial purpose, structure, and intended audience; types and use of evidence; the impact of rhetorical strategies; and the social, political, and philosophical assumptions that underlie the text. Students will receive feedback on their writing in every class. Full attendance and participation satisfies the Early Start requirement in English. An end of course analytical essay may be used to improve freshman English placement for SJSU students.

Prerequisite(s): Writing enrollment category W-III or W-IV and Undergraduate Transitory (UGT) program.

Grading: Early Start Program English

Note(s): No Degree Credit

ESE 1003 - Introduction to Analytical Writing

1 unit(s)

Students will submit an analytical essay on an assigned topic, master a rubric for evaluating analytical writing, peer review essays written by classmates, and then reevaluate their own writing. All deadlines must be strictly adhered to. Online course.

Prerequisite(s): Writing enrollment category W-III or W-IV and Undergraduate Transitory (UGT) program.

Grading: Early Start Program English

Note(s): No Degree Credit

Early Start Program Math

ESM 1 - Mathematical Reasoning

3 unit(s)

Focus on foundational mathematical skills and knowledge in the context of contemporary society.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): ESM 1001S required for Math Enrollment Categories M-III and M-IV.

Grading: ABC-/No Credit

Note(s): Early Start students only. Course is equivalent to MATH 1.

ESM 9 - Mathematics and Logic for General Education

3 unit(s)

A survey of basic concepts and methods, focusing on logic, computation, sets, numbers, geometry and probability. Emphasis will be placed on using these concepts in daily life and in coping with public issues.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): ESM 9W required as a corequisite for Math Enrollment Categories M-III and M-IV; and recommended for Enrollment Category M-II.

Grading: ABC-/No Credit

Note(s): Early Start students only. Course is equivalent to PHIL 9.

ESM 9W - Mathematics & Logic for General Education Workshop

1 unit(s)

Companion laboratory-style course for ESM 9; concurrent enrollment in both is required. Focuses on providing extra help and support for students with both concepts and techniques from propositional logic and from first-order logic.

Corequisite(s): ESM 9

Grading: ABC-/No Credit

Note(s): Early Start students only. Equivalent to PHIL 9W.

ESM 10A - Mathematics in Art and Music

3 unit(s)

An accessible look into some beautiful ideas of mathematics in art and music. Topics include plane symmetries, tilings, perspective drawing, musical intervals, scales and temperament, timbre and periodic functions.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): ESM 1010AS required for Math Enrollment Categories III/IV.

Grading: ABC-/No Credit

Note(s): Early Start students only. Course is equivalent to MATH 10A.

ESM 10D - Probability, Data Science, Ethics, and You

3 unit(s)

An accessible introduction to the basic principles of probability and data science with a focus on ethical considerations.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): ESM 1010DS required for Math Enrollment Categories III/IV.

Grading: ABC-/No Credit

Note(s): Early Start students only. Course is equivalent to MATH 10D.

ESM 10P - Mathematics in Politics

3 unit(s)

An accessible look into some beautiful ideas of mathematics in politics. Topics include voting systems, apportionment and gerrymandering.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): ESM 1010PS required for Math Enrollment Categories M-III and M-IV.

Grading: ABC-/No Credit

Note(s): Early Start students only. Course is equivalent to MATH 10P.

ESM 15 - Statway: Statistics-Concepts & Methods

3 unit(s)

Concepts and methods of statistics with an emphasis on data analysis. Topics include methods for collecting data, graphical and numerical descriptive statistics, correlation, simple linear regression, basic concepts of probability, confidence intervals and hypothesis tests for means and proportions, and chi-square tests.

Lecture 1 hour / Activity 4 hours

Satisfies B4: Mathematics/Quantitative Reasoning requirement with completion with a grade of C- or better.

Grading: ABC-/No Credit

Note(s): Early Start students only. Course is equivalent to UNVS 15.

ESM 18A - College Algebra

3 unit(s)

Review of basic algebra. Complex numbers, functions, graphs, polynomials, inverse functions, exponential and logarithmic functions.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): ESM 1018AS

Grading: ABC-/No Credit

Note(s): Early Start students only. Course is equivalent to MATH 18A.

ESM 19 - Precalculus

5 unit(s)

Preparation for calculus: polynomial, rational, exponential, logarithmic and trigonometric functions; analytic geometry.

Lecture 4 hour/Lab 3 hours.

Satisfies B4: Mathematics/Quantitative Reasoning

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III; or MATH 1 with a grade of C- or better. Early Start students only. Course is equivalent to MATH 19.

Corequisite(s): MATH 1019S required as a corequisite for Enrollment Category M-III, and recommended for Enrollment Category M-II.

Grading: ABC-/No Credit

Note(s): A grade of C- (1.7) or better is required to satisfy GE Area B4.

ESM 26 - Quantitative Reasoning in Linguistic Diversity

3 unit(s)

An introduction to descriptive and inferential statistics, including the visual interpretation and presentation of data about linguistic diversity and related social phenomena like education and immigration. Interpretation of numerical and graphical data to draw inferences about complex social issues.

Satisfies B4: Mathematics/Quantitative Reasoning

Prerequisite(s): Mathematics Enrollment Category M-I or M-II; for Categories III and IV, LING 26W is required as a corequisite, unless a GE Area B4 course was previously completed with a grade of C- or better. Early Start students only. Course is equivalent to LING 26.

Grading: ABC-/No Credit.

Note(s): A grade of C- or better is required to satisfy GE Area B4.

ESM 1001S - Supported Instruction for ESM 1

1 unit(s)

Reviews relevant background material prior to the corresponding content for ESM 1.

Activity 2 hours.

Corequisite(s): Required corequisite for enrollment category M-III and M-IV students in ESM 1.

Grading: Credit/No Credit. No Degree Credit.

Note(s): Credit/No Credit, No Degree Credit. Early Start students only. Course is equivalent to MATH 1001S.

ESM 1010AS - Support Course for ESM 10A

1 unit(s)

Support course that reviews relevant background material prior to the corresponding content for ESM 10A.

Activity 2 hours.

Corequisite(s): Enrollment in Early Start program/plan. Required for ESM 10A students in Math Enrollment Category III/IV.

Grading: Credit/No Credit. No Degree Credit.

Note(s): Credit/No Credit, No Degree Credit. Early Start students only. Course is equivalent to MATH 1010A.

ESM 1010DS - Support Course for ESM 10D

1 unit(s)

Support course that reviews relevant background material prior to the corresponding content for ESM 10D.

Activity 2 hours.

Corequisite(s): Required for ESM 10D students in Math Enrollment Category III/IV.

Grading: Credit/No Credit. No Degree Credit.

Note(s): Credit/No Credit, No Degree Credit. Early Start students only. Course is equivalent to MATH 1010D.

ESM 1010PS - Support Course for ESM 10P

1 unit(s)

Corequisite support course to review relevant background material prior to the corresponding content for ESM 10P.

Activity 2 hours.

Corequisite(s): Required for ESM 10P students in Math Enrollment Categories III/IV.

Grading: Credit/No Credit. No Degree Credit.

Note(s): Credit/No Credit, No Degree Credit. Early Start students only. Course is equivalent to MATH 1010P.

ESM 1018AS - Support Course for ESM 18A

1 unit(s)

Support course that reviews relevant background material prior to the corresponding content for ESM 18A.

Activity 2 hours.

Corequisite(s): Required for Category M-III and Category M-IV students in ESM 18A.

Grading: Credit/No Credit. No Degree Credit.

Note(s): Credit/No credit, No Degree Credit. Early Start students only. Course is equivalent to MATH 1018AS.

Economics

ECON 1A - Principles of Economics: Macroeconomics

3 unit(s)

Determination of economic aggregates such as total output, total employment, the price level and the rate of economic growth.

Grading: Letter Graded

Note(s): May be taken concurrently or prior to ECON 1B. Offered in Fall 2021 as 4 units and Spring 2022 as 3 units.

ECON 1B - Principles of Economics: Microeconomics

3 unit(s)

Allocation of resources and distribution of income as affected by the workings of the price system and by government policies.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Note(s): May be taken concurrently or prior to ECON 1A.

ECON 2A - Principles of Macroeconomics Online Lab

1 unit(s)

Self-paced, online lab guides students through practice and ["Graded"] problem sets of key macroeconomics tools and concepts.

Grading: Credit/No Credit

ECON 2B - Principles of Microeconomics Online Lab

1 unit(s)

Self-paced on line lab guides students through practice and ["Graded"] problem sets of key microeconomics tools and concepts.

Grading: Credit/No Credit

ECON 2C - Statistics Lab

1 unit(s)

This 1 unit, credit/no credit statistics lab is designed for transfer students who have taken a 3 semester-unit elementary statistics course. (SJSU Economics Department requires 4 semester units of introductory statistics. Transfer students who are economics majors and minors must make-up the missing unit.) The lab also is useful for those who have taken an elementary statistics course and are in need of a refresher. Basic statistical concepts and methods that emphasize understanding the principles of data collection and analysis rather than theory. Discussions of how statistics is commonly used in the real world.

Grading: Credit/No Credit

ECON 3 - Economic Statistics

4 unit(s)

Elementary statistical analysis of economic data, probability theory, probability distributions, sampling, sampling distributions, estimation, hypothesis testing, simple linear regression, correlation and index numbers.

Misc/Lab: Lecture 3 hours/lab 2 hours.

Prerequisite(s): ECON 1A, and ECON 1B

Grading: Letter Graded

ECON 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ECON 100W - Writing Workshop: Economic Reports

4 unit(s)

Writing skills appropriate to majors in economics of lucid expression in essays, reports and other types of communication.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): ECON 1A and ECON 1B; A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

ECON 101 - Microeconomic Analysis

4 unit(s)

Consumer behavior determining demands for goods and services. Theory of the firm including theories of production and cost. Theory of distribution to production factors.

Prerequisite(s): ECON 1B and Calculus (MATH 30 or MATH 30X or MATH 71 or MATH 71X).

Grading: Letter Graded

ECON 102 - Macroeconomic Analysis

4 unit(s)

Theory of aggregate demand and related topics: national income accounting, employment and inflation, monetary and fiscal policies, economic stability, growth and balance of payments equilibrium.

Prerequisite(s): ECON 1A.

Grading: Letter Graded

ECON 103 - Intro to Econometrics

4 unit(s)

Use of econometric methods in analyzing economic data. Simple and multiple regression. Problems of autocorrelation multicollinearity and heteroskedasticity.

Misc/Lab: Lecture 3 hours/lab 2 hours

Prerequisite(s): ECON 3 or equivalent.

Grading: Letter Graded

ECON 103A - Introduction to Econometrics and Research Methods

4 unit(s)

Research methods and core econometric techniques for analysis of causal effects, from difference-in-means tests of experimental data through multiple regression analysis of observational data. Topics include selecting an appropriate research question, reviewing the relevant literature, and obtaining data. Core econometric techniques used to analyze data in an original term paper.

Prerequisite(s): Introductory statistics (SOCI 15, STAT 95, UNVS 15, or equivalent).

Grading: Letter Graded

ECON 103B - Econometric Methods

4 unit(s)

Continuation of the econometric techniques and research methods introduced in ECON 103A. Econometric techniques for panel data, instrumental variables, regression discontinuity and difference-in-difference designs, and an introduction to time series topics. Term paper building on research projects completed in ECON 103A required.

Prerequisite(s): ECON 100W and ECON 103A.

Grading: Letter Graded

ECON 104 - Mathematical Methods for Economics

4 unit(s)

Applications of linear algebra and differential calculus to economic analysis. Topics include market equilibrium, properties of production functions, multipliers, optimization methods, comparative statics analysis.

Prerequisite(s): ECON 1A, ECON 1B, and a grade of "C" or better in MATH 30 or MATH 30X or MATH 71 or MATH 71X.

Grading: Letter Graded

ECON 106 - Managerial Economics

4 unit(s)

Applications of economic analysis to practical problems in the private and public sector. Demand and cost analysis, market structure, statistical estimation and forecasting; case studies.

Prerequisite(s): ECON 1B.

Grading: Letter Graded

ECON 107 - Introduction to Environmental Economics and Policy

4 unit(s)

Analysis of basic economic and political factors related to the environmental crisis. Surveys policy approaches to the problem: regulation, taxes, subsidies, cost benefit analysis.

Lecture 3 hours/Lab 2 hours.

Prerequisite(s): ECON 1B or instructor consent.

Grading: Letter Graded.

Cross-listed with ENVS 107. Environmental Studies is responsible for scheduling.

Sustainability Focused - SDG 17: Partnerships for the Goals

ECON 108 - Cost-Benefit Analysis

4 unit(s)

Theory and practice of cost-benefit analysis applied to various topics including public projects and environment. Welfare foundations of CBA, valuation of goods (such as clean air, wilderness, and sports arenas), discounting future values and cost.

Prerequisite(s): ECON 1B and ECON 3 or STAT 95, or instructor consent

Grading: Letter Graded

Cross-listed with ENVS 108. Economics is responsible for scheduling.

Sustainability Focused - SDG 12: Responsible Consumption and Production

ECON 109 - Analysis of Economic Issues for Teachers

3 unit(s)

Economic analysis of such topics as unemployment, inflation, poverty, pollution, education and international trade will be covered within the context of K-12 education.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): Not acceptable for Economics majors, except double majors; acceptable for Economics minors.

ECON 112 - Economic Development

4 unit(s)

Theories of development and underdevelopment. Problems of initiating and sustaining growth. Relations between developed and underdeveloped regions. Economic reform and change in the underdeveloped world.

Prerequisite(s): ECON 1A and ECON 1B.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

ECON 113A - Economic History of the United States

4 unit(s)

Economic analysis of U.S. and Canadian history to the mid-20th century and its application to understanding the causes, patterns and consequences of economic development.

Prerequisite(s): ECON 1A and ECON 1B, or instructor consent.

Grading: Letter Graded

ECON 113B - Economic History of Europe

4 unit(s)

Economic analysis of European history to the mid-20th century and its application to understanding the causes, patterns and consequences of economic development.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

ECON 121 - Industrial Organization

4 unit(s)

Microeconomic theory applied to pricing of products by seller having different market structures such as competition, imperfect competition, monopoly, public utility regulation or government pricing.

Prerequisite(s): ECON 1B.

Grading: Letter Graded

ECON 132 - Public Finance

4 unit(s)

Microeconomics of the public sector. Role of government in market systems. Cost-benefit analysis, public choice theory, taxation, fiscal federalism. State and local government sector.

Prerequisite(s): ECON 1B.

Grading: Letter Graded

ECON 133 - Public Choice

4 unit(s)

Economic analysis applied to non-market decision making. Topics may include: voting, special interests, rent-seeking, legislative decision-making, bureaucracy, collective action problems, judicial decision-making, political business cycles, and comparative political institutions.

Prerequisite(s): ECON 1B

Grading: Letter Graded

ECON 135 - Money and Banking

4 unit(s)

Monetary institutions and theory, central banking, Federal Reserve System, interest rates, foreign exchange, price level theory, flow of funds, policy relative to private, government and international finance.

Prerequisite(s): ECON 1A.

Grading: Letter Graded

ECON 136 - International Economics

4 unit(s)

International trade theory, customs union, tariffs, quota policies. International monetary system balance of payments problems, foreign exchange markets.

Prerequisite(s): ECON 1A and ECON 1B.

Grading: Letter Graded

ECON 137A - Fundamentals of Corporate Finance

4 unit(s)

Net present value criterion for investment and financial decisions, portfolio analysis, capital assets pricing model, information efficiency of security markets, influence of dividend policy on stock prices and optimality of financial structure of corporations.

Prerequisite(s): ECON 1B.

Grading: Letter Graded

ECON 137B - Topics in Corporate Finance

4 unit(s)

Analytical coverage of topics such as role of leverage, valuation of options (warrants, puts, calls and convertibles), valuation of risky debt, capital budgeting, mergers, financial planning and international aspects of corporate finance.

Prerequisite(s): ECON 137A or instructor consent.

Grading: Letter Graded

ECON 138 - Business and Economic Forecasting

4 unit(s)

Use of regression techniques to forecast movements in economic conditions having effects on business firms and governments.

Prerequisite(s): ECON 1A, ECON 1B, ECON 103A, and a semester of statistics.

Grading: Letter Graded.

ECON 139 - Principles of Investments

4 unit(s)

Stocks, bonds, money market instruments, options, futures and real estate. Institutions, markets and theory. Speculation, present value theory, yields, term structure, taxes, portfolios and insurance.

Prerequisite(s): ECON 1A and ECON 1B.

Grading: Letter Graded

ECON 141 - Law and Economics

4 unit(s)

Examines the economic effects of legal institutions, existing and proposed, and application of economic analysis to the law. Evaluation of the interactions between legal and economic principles and introduction to standard topics such as property rights, contracts, liability, and torts.

Prerequisite(s): ECON 1A or ECON 1B.

Grading: Letter Graded

ECON 151 - Labor Economics

4 unit(s)

Development of labor institutions and markets, public regulation of unions, economics of collective bargaining. Theories of wages, employment and labor income.

Prerequisite(s): ECON 1A and ECON 1B.

Grading: Letter Graded.

ECON 155 - Principles of Austrian Economics

4 unit(s)

Examines the discipline of Austrian economics and differentiates from other economic disciplines. Uses the Austrian approach to analyze and understand the consequences of various policy prescriptions.

Prerequisite(s): ECON 1A and ECON 1B

Grading: Letter Graded

ECON 158 - Economics of Entrepreneurship

4 unit(s)

Examines how economists have approached the phenomenon of entrepreneurship, from its behavioral foundations to its effects on economic growth and progress. Explores the role of entrepreneurship in theory and policy, and emphasizes its cultural, legal, and political determinants.

Prerequisite(s): ECON 1A and ECON 1B.

Grading: Letter Graded

ECON 165 - Regional Economics

4 unit(s)

The economic structure of a region, including the economic base and its relation to industries serving the local market, the relationships among the subregions and the location of industry.

Prerequisite(s): ECON 1A or ECON 1B or instructor consent.

Grading: Letter Graded

ECON 166 - Urban Economics

4 unit(s)

Analysis of major economic problems of metropolitan areas: taxation, financing of urban services, transportation, residential and industrial development, local growth controls, zoning and housing.

Prerequisite(s): ECON 1B.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ECON 170 - Health Economics

4 unit(s)

Introduction to the application of economics to healthcare and medical care issues including demand and supply of healthcare, health insurance, health quality and safety, and the role of regulations within a healthcare system.

Prerequisite(s): ECON 1A and ECON 1B

Grading: Letter Graded

ECON 180 - Individual Studies

1-4 unit(s)

Prerequisite(s): Instructor consent and department chair approval.

Grading: Credit/No Credit

ECON 185 - Applied Economics Internship

1-8 unit(s)

Supervised work with a private or public employer. Provides opportunity to gain experience in applied economics or in a discipline closely related to economics.

Course may be repeated for credit.

Prerequisite(s): Junior or senior standing and consent of internship coordinator.

Grading: Credit/No Credit

ECON 190 - History of Economic Thought

4 unit(s)

Course includes Ancient Greek thought; the School of Salamanca; mercantilism; Adam Smith and classical political economy; the pre-Marxian socialists and Karl Marx; the marginalist revolution and the development of neoclassical economics; and monetary theory from David Hume to Keynes.

Prerequisite(s): ECON 101, ECON 102, ECON 100W, and ECON 103A; or instructor consent.

Grading: Letter Graded

ECON 191 - Economic Thought of Nobel Prize Winners

4 unit(s)

Exploration of lectures and essays related to economics Nobel Prize Winners since 1969. Topics include market theory, information theory, game theory, macroeconomic models, and new developments. Students submit weekly questions, three papers, and a presentation on a Nobel Prize winner.

Prerequisite(s): ECON 101, ECON 102, ECON 100W, and ECON 103A; or instructor consent.

Grading: Letter Graded

ECON 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ECON 197 - Experimental Economics

4 unit(s)

Experimental Economics uses computerized laboratory experiments, field experiments, and quasi-natural experiments to test economic theory and human behavior. The course covers game theory, markets and auctions, experimental methodology and design, and field experiments.

Prerequisite(s): ECON 1B and introductory statistics.

Grading: Letter Graded.

ECON 201 - Seminar in Microeconomic Analysis

3 unit(s)

Advanced analysis of costs, pricing, revenue, market structures, economic efficiency, rates of wages, rent, interest, profits and allocation of resources; analytical models and economic equilibrium.

Prerequisite(s): Classified graduate standing and ECON 104.

Grading: Letter Graded

ECON 202 - Seminar in Macroeconomic Analysis

3 unit(s)

Aggregate analyses of inflation and unemployment (and of alternative fiscal and monetary policies) using general equilibrium and dynamic disequilibrium adjustment models of real output, labor, real capital and financial markets (both domestic and international).

Prerequisite(s): Classified graduate standing.

Grading: Letter Graded

ECON 203A - Economic Research Methods

3 unit(s)

Illustrates how to construct an economic study. Topics include basic statistical methods, cost-benefit analysis, data analysis, other quantitative techniques, literature reviews, and the professional standards of the discipline.

Satisfies Graduation Writing Assessment Requirement (GWAR).

Prerequisite(s): Classified graduate standing.

Grading: Letter Graded

ECON 203B - Seminar in Econometric Methods

3 unit(s)

Elements of statistical inference (t, F and Chi-square tests); the classical regression model and simultaneous equations models; estimation and prediction; the use of lagged and dummy variables; problems of multicollinearity, heteroskedasticity, serial correlation of disturbances and errors in the variables.

Prerequisite(s): ECON 203A or instructor consent.

Grading: Letter Graded

ECON 205 - Workshop in Economic Analysis

3 unit(s)

Capstone writing course in the program. Students prepare a written report on some topic of economic analysis and present the results to the class.

Prerequisite(s): ECON 201, ECON 202 or ECON 235, and ECON 203A; or instructor consent.

Grading: Letter Graded

ECON 212 - Economic Development

3 unit(s)

Theories of development and underdevelopment. Problems of initiating and sustaining growth. Relations between developed and underdeveloped regions. Economic reform and change in the underdeveloped world.

Grading: Letter Graded

ECON 221 - Industrial Organization

3 unit(s)

Analysis of the relations between industry structures, business conduct and economic performance under conditions of limited governmental interference. Appraises the role of competition and monopoly in the American economy. Stresses the role played by antitrust laws and regulatory commissions in the U.S. economy.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

ECON 232 - Seminar in Public Finance

3 unit(s)

Determination of objectives of the public sector; pricing and output in the public sector; taxes, their distribution and allocative effects; public expenditure theory; public debt theory and policy.

Prerequisite(s): Classified graduate standing.

Grading: Letter Graded

ECON 235 - Seminar in Monetary Theory and Policy

3 unit(s)

Concentration on the theoretical aspects of money and monetary policy. Early and modern theories of money demand; early Keynesian and Monetarist monetary analysis; expectations and dynamic monetary business cycles; monetary policy under the Keynesian, Monetarist and New Classical assumptions; open economy monetary theory.

Prerequisite(s): Classified graduate standing.

Grading: Letter Graded

ECON 236 - Seminar in International Trade and Finance

3 unit(s)

Advanced theory of international trade and finance and its application to current problems in international economics.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): Not offered on a regular basis.

ECON 241 - Seminar in Law and Economics

3 unit(s)

Examines the economic effects of legal institutions, existing and proposed, and economic analysis applied to the law. Evaluation of the interactions between legal and economic principles and introduction to standard topics such as property rights, contracts, liability, and torts. Includes case studies, a proposal, research paper and oral presentation.

Prerequisite(s): Classified graduate standing.

Grading: Letter Graded

ECON 251 - Seminar in Labor Economics

3 unit(s)

Analysis of labor markets, utilizing economic theory and empirical techniques with applications to public policy. Topics include: investment in human capital; employee compensation issues; compensating wages; discrimination; unions; and public sector labor markets.

Prerequisite(s): Graduate Standing or Instructor consent.

Grading: Letter Graded

ECON 281 - Advanced Topics in Economics

3 unit(s)

This course addresses current developments or special-interest topics in economics.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor Consent

Grading: Letter Graded

ECON 285 - Applied Economics Internship

3-6 unit(s)

Supervised work with a private or public employer.

Prerequisite(s): Graduate standing and 3.0 GPA.

Grading: Credit/No Credit

ECON 297 - Experimental Methods in Economics

3 unit(s)

Study economic decision-making through the lens of laboratory and field experiments. Review many of the contributions of experimental economists to the understanding of human sociality, human rationality, markets, and institutions. This course also covers the methodological tools required to design and run experiments.

Prerequisite(s): ECON 201 and classified standing, or instructor consent.

Grading: Letter Graded

ECON 298 - Special Study

1-3 unit(s)

Advanced individual research projects.

Prerequisite(s): Instructor consent and department chair approval.

Grading: Mandatory Credit/No Credit/RP

ECON 298E - Special Study Comprehensive Exam

1 unit(s)

Individual preparation for the comprehensive exam. Approval of department chair, graduate advisor, or instructor is required. Satisfactory completion satisfies culminating experience requirement.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit/RP

ECON 298P - Master's Project

1-6 unit(s)

Open only to approved candidates for the MA - Economics degree.

Repeatable for credit.

Grading: Credit/No Credit/RP.

ECON 299 - Master's Thesis

1-6 unit(s)

Open only to approved candidates for the MA - Economics degree.

Repeatable for credit.

Grading: Credit/No Credit/RP.

ECON 1290R - Culminating Experience Supervision

1 unit(s)

Department and University support for progress to completion of culminating experience.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a culminating experience class or project.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Ed.D Leadership Program

EDD 501 - Quantitative Analysis for Educational Research

3 unit(s)

Students will develop a comprehensive understanding of the statistical principles used in the description and analysis of data. Students will also learn how to conduct appropriate statistical analyses, interpret findings, and compose meaningful reports while examining how these skills can lead to being a more informed and involved educator.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 502 - Qualitative Methods in Educational Research

3 unit(s)

Explores qualitative research approaches and methods including participant observation, interviews, ethnography, narrative and case study approaches; includes methods of data analysis such as discourse analysis, dialogic analysis, and visual analysis.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 510 - Educational Leadership: Theory and Practice

3 unit(s)

This course presents an overview of the major concepts and theories that constitute the knowledge base in the leadership of education, including an examination of leadership theories from early models of hierarchical control to contemporary models of shared leadership and organizational transformation.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 511 - Leadership for Learner Centered Organizations

3 unit(s)

Students will develop the knowledge and skills for examining, designing and implementing organizational, classroom, and training conditions that support quality learning experiences for individuals in the organization.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 512 - Leadership, Complexity, and Systems Thinking

3 unit(s)

This course presents principles, theories, attributes related to individual leadership development. It includes concepts related to systems thinking that are critical to the long-term sustainability of your school, agency, or organization.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 515 - Leadership, Diversity, and Culture: Family, School and Community Connections

3 unit(s)

Educational leadership and management issues related to an increasingly diverse student body in educational institutions. Reviews educational research, practice, theory and legal matters within local and global contexts. Students engage in activities and discussions focused on strategies utilized by social justice advocates that have the potential to improve educational experiences and opportunities in P-12 settings, and in university-school-community partnerships. Emphasis placed on the interaction between underrepresented segments of society and educational institutions with attention to varying cultural backgrounds, communication patterns, social networks, leadership and administrative styles.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

EDD 520 - Organizational Behavior and Change in Education

3 unit(s)

This course seeks to interpret and analyze observed organizational processes, behavior, and potential solutions using theoretical insights. The course relies on seminar discussions, theory applications, and an organizational change design project and evaluation research design.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 522 - Communication and Educational Leadership

3 unit(s)

This course analyzes popular narratives on education and practices persuasive, rhetorical strategies for using those narratives to shape public expectations of educators, students, and schools.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 530 - Assessment, Testing and Evaluation: Contexts and Implications for School Reform

3 unit(s)

This course provides a historical, analytical and empirical framework for understanding assessment, testing and evaluation in K-12 education. The context aims at exploring the current national and state accountability policy regimes in the U.S. particularly those linked to the Common Core Standards movement.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 535 - Education Policy, Resource Allocation and School Reform

3 unit(s)

This course is designed for students to develop understanding of education policy. The course explores the formation, design, and implementation of school reform efforts across different levels of educational system.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Letter Graded

EDD 536 - The Politics of Education and Finance of Schooling

3 unit(s)

This course presents an overview of the major concepts and theories that constitute the knowledge base in the politics of education and finance of schooling.

Grading: Letter Graded

EDD 540 - Education and Leadership in Global Context: Globalization & Narrative Ethics

3 unit(s)

This course provides global perspectives on education and leadership in contemporary society with emphasis on social, political, and economic factors that affect access and equity and the role of leadership.

Grading: Letter Graded

EDD 585 - Field Experience: Global Context

3 unit(s)

Lectures, field visits, and extended study of education and leadership in global context

Grading: Mandatory Credit/No Credit/RP

EDD 591A - Proseminar I: Introduction to Doctoral Studies in Educational Leadership

3 unit(s)

This course provides an orientation to the doctoral program in educational leadership, doctoral studies more generally, and an overall introduction to educational leadership studies. The seminar will discuss the skills and practices needed to be successful doctoral students, both as consumers and producers of research.

Grading: Credit/No Credit

EDD 591B - Proseminar II - Practitioner-Led Research

3 unit(s)

The course content focuses on practice-led research methods and the problems they are best suited to answer. In practice-led research, the primary focus of the research is to advance knowledge about practice, or to advance knowledge within practice.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this doctoral program.

EDD 591C - Professional Seminar III: Structuring & Writing a High Quality Dissertation

3 unit(s)

The focus of the seminar is to facilitate the production of a high quality dissertation. Candidates will gain a deep understanding of the expectations of dissertation writing by examining published dissertations and considering relevant applications to their own dissertation writing.

Grading: Mandatory Credit/No Credit/RP

EDD 599 - Dissertation

3 unit(s)

Under the supervision of the advisor, conduct, complete, and defend research-based dissertation. Write and publish the final dissertation following official guidelines.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Acceptance into the Ed.D. Program

Grading: Credit/No Credit/RP.

Note(s):

EDD 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on dissertation or project.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Education

EDUC 80 - Independent Study

1-3 unit(s)

Supervised study related to the field of education appropriate to lower division undergraduate students. Individuals work on special topics by arrangement with a faculty member.

Course may be repeated for credit for up to 3 units.

Grading: Credit/No Credit

EDUC 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

EDUC 157SL - Community Action/Community Service

3 unit(s)

A campus-wide service learning program with opportunities for direct involvement with local community services, both off campus and on campus. Weekly seminars held on campus or at the field site, plus four to six hours of community service work per week at the field site.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with COMM 157SL / ENGR 157SL / HA 157SL / SCI 157SL. Communication Studies is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

EDUC 186 - Using Instructional Media

3 unit(s)

Selection, utilization and evaluation of instructional media in adult learning configurations. Analysis of communication and learning theories. Design and production of teaching and learning materials.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

EDUC 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

EDUC 298 - Individualized Studies in Education

1-6 unit(s)

Supervised study in school administrations for both the preliminary and professional services credential programs.

Prerequisite(s): Admission to Graduate department, EDLD 200, or advisor consent.

Grading: Mandatory Credit/No Credit/RP

Educational Leadership

EDD 590 - Research Seminar and Colloquium in Educational Leadership

3 unit(s)

Research seminar and colloquium sessions engage students with invited experts who are conducting research on current topics at the intersection of fields that affect educational leadership. Designed to deepen and make connections with students' ongoing research interests.

Prerequisite(s): Acceptance into the EdD Program.

Grading: Credit/No Credit.

EDD 598 - Dissertation Research Development

1-2 unit(s)

Supervised individual research in support of the dissertation research. Write and defend the dissertation proposal and obtain IRB to conduct the research.

Repeatable for credit up to 6 units.

Prerequisite(s): Successful completion of first set of summer Ed.D. courses, or dissertation advisor consent. Not available to students outside of the Ed.D. Program.

Grading: Credit/No Credit.

EDLD 10 - Talking Back to Research: Critical Skills for Leaders

3 unit(s)

An introduction to the foundations of research from different interdisciplinary traditions and perspectives. With a particular focus on oral communication and public discourse, students gain applied competencies in professional development, public speaking, and research methodology and process.

Grading: Letter Graded

EDLD 11 - Making Research Work: Explorations in Career Pathways

1 unit(s)

An interdisciplinary exploration into research career pathways and professional development. Students prepare for and present at the Undergraduate Research Opportunity Program end-of-year research symposiums.

Prerequisite(s): EDLD 10

Grading: Credit/No Credit.

EDLD 101 - Rediscovering Disability Studies at the Intersections

3 unit(s)

As an introduction to the field of disability studies and various theorizations on disability and normalcy in relationship to education and society, students are exposed to seminal and emerging content about disability as a social, cultural, historical and political phenomenon, as well as complicated embodiments that intersect with race, gender, sexuality, religion, and other cultural identities. Content of the course is obtained from multiply marginalized, disabled community scholars.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

EDLD 110 - Introduction to Educational and Community Leadership

3 unit(s)

Designed to assist students in a mindful, collective investigation of their aspirations to best serve the communities they are members of. In addition to identifying healthy approaches to work-life-school balance to reach their professional goals, students systematically examine what educational and community-based professionals do, why they do it, and how they can develop as agents of social change.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

EDLD 120 - The Right to Learn: Language, Dignity, and Education

3 unit(s)

Through the lens of linguistic diversity and human dignity, this course invites debate about the role of formal schooling within a democratic society and fosters analysis of the ways in which access to schooling and its benefits have been disparately allocated across US history.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

EDLD 130 - Antiracist Leadership: Cases, Frameworks, and Praxis

3 unit(s)

Explores historical and contemporary cases of antiracist action, for example, the Montgomery bus boycott and the elimination of the Oakland Unified School District's police department. Models of leadership from a variety of frameworks, such as Kendi's on antiracism, are studied and used to engage in intersectional analysis. Co-constructed among instructor(s) and students, who may share their knowledge of cases and / or frameworks with other course members. Includes designing and possibly enacting a plan of social action related to a local, regional, statewide, national, or global issue.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

EDLD 140 - Identity, Solidarity, and Social Justice Leadership

3 unit(s)

Examine, assess, and strengthen understandings of students' own, and others' social identities; and build capacity for multiculturally-skilled leadership for social justice. Critically explore causes, reinforcements, and remedies for injustices; and meanings and experiences of solidarity and liberation.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

EDLD 160 - 1st Generation College Students Pathways

3 unit(s)

Designed to review and discuss research-based issues of educational equity and the experience of first-generation college students pathways to undergraduate and graduate school. Students will also have opportunities to engage research, theory, and practice through introductory approaches to qualitative research method called autoethnography.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

EDLD 200 - The School Manager

3 unit(s)

Management skills for leading effective school organizations. Present and emerging issues in our society and how they relate to schooling. Governance of education.

Prerequisite(s): Admission to Graduate Division.

Grading: Letter Graded

EDLD 201 - Epistemologies of Educational Leadership: Personal, Political, & Intellectual

3 unit(s)

Introduction to the personal, political, and intellectual dimensions that inform one's epistemology of educational leadership. Students engage with research on practices in the field of Educational Leadership alongside an autoethnographic exploration of how their experiences influence their approaches to leadership and identify areas of growth.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Admission to the Graduate Division.

Grading: Letter Graded

Note(s): Course satisfies Graduate Writing Assessment Requirement (GWAR).

EDLD 202 - Emancipatory Teaching and Learning

3 unit(s)

Close study of instructional leadership and the ways school leaders have supported critical pedagogies including ethnic studies to highlight best practices that have resulted in increased student and community engagement.

Repeatable for credit.

Prerequisite(s): EDLD 201 and admission to the SJSU Graduate Division.

Grading: Letter Graded

EDLD 204 - Critical Studies of Educational Policy

3 unit(s)

A close study of historical and current educational policies. Engagement with local, statewide, and national advocates who have worked on writing and advocating for educational policies for social change.

Prerequisite(s): EDLD 206.

Grading: Letter Graded

EDLD 205 - Equity & Access: Practices, Policies, & Pedagogies

3 unit(s)

Engagement with common problems of practice in school communities to improve equity and access challenges for historically underserved students. Development of collaborative approaches to emancipatory leadership practices, policies, and pedagogies with teacher leaders and school leaders.

Prerequisite(s): EDLD 202 and admission to the Graduate Division, or department permission.

Grading: Letter Graded

EDLD 206 - Emancipatory Leadership as Praxis Seminar

3 unit(s)

Intensive experiential learning through applied consulting on living case studies aimed to challenge inequitable policies and practices to improve students' opportunities to learn. Students work closely with the selected site or situation, as well as with their faculty member and the Lurie College Leadership Fellow.

Prerequisite(s): EDLD 205 or department permission.

Grading: Letter Graded

Note(s): Applied Culminating Experience.

EDLD 210 - Socio-Cultural Foundations of U.S. Higher Education

3 unit(s)

Examines major events in the development of colleges and universities in the United States. It considers how historical, social, legal, economic, political forces have shaped and continue to influence the development of contemporary U.S. higher education policies and practices.

Grading: Letter Graded

EDLD 211 - Higher Education Leadership

3 unit(s)

Designed to enhance the students' understanding of leadership issues within the context of higher education organizations. Examines a broad range of leadership theories, concepts, practices, and issues. The course will involve analysis of case studies, engagement in interactive exercises and class discussions, guest speakers, and guest presentations. Encompasses the development of knowledge and skills to educational organizational leadership in higher education, and specifically to develop educational leaders who can create a culture that is conducive to learning for all students and staff.

Grading: Letter Graded

EDLD 212 - Diversity, Equity, and Social Justice in Higher Education

3 unit(s)

Examines topics related to diversity, social justice, and inclusion in the field of Higher Education. Development and knowledge of theories related to diversity, equity, and inclusion will be explored.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

EDLD 212C - Diversity, Equity, and Social Justice in Higher Education

3 unit(s)

Examines topics related to diversity, social justice, and inclusion in the field of Higher Education. Development and knowledge of theories related to diversity, equity, and inclusion will be explored.

Satisfies Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

EDLD 213 - Policy and Ethics of Higher Education Governance and Finance

3 unit(s)

The purpose of this course is to explore the link between higher education governance and finance. Particular attention will be paid to exploring finance history and trends, understanding why finance challenges emerge, analyzing new and existing policies, examining budget processes and cycles, and reviewing how governance through finance may impact educational quality, equity, accountability, and sustainability.

Grading: Letter Graded

EDLD 214 - Critical Data Analysis in Higher Education

3 unit(s)

The purpose of this course is to provide working knowledge of the skills required to conduct scientific inquiry pertaining to education and human service programs. Knowledge derived from this course will prepare each student to be: (1) a critical consumer of research and evaluation information, and (2) a beginning practitioner in conducting investigative efforts

Grading: Letter Graded

EDLD 215 - Contemporary Issues in Higher Education

3 unit(s)

Examines current issues in higher education and prepares educational leaders on how to critically approach the topics addressed in the course. Development and knowledge of current issues and trends in higher education will be explored, including but not limited to: academic governance, external relations, access and admissions, student financial aid, student services, campus climate, affirmative action, privatization, and proprietary education, to name a few. During the semester, our primary goal is to unpack the complex social, economic, historical, and political implications associated with emerging higher education policy trends and debates.

Grading: Letter Graded

EDLD 216 - Law, Policy, and Ethics in Higher Education

3 unit(s)

Seminar on law, policy, and ethics in higher education. Emphasis is directed toward critical analysis of current issues and related scenarios. This collaborative and interactive course will center on dialogue, reflection, practice, and critique of legal, policy, and ethical issues in higher education.

Grading: Letter Graded

EDLD 217A - Equity-Minded Leadership in Higher Education: Practices, Policies, and Pedagogies

3 unit(s)

Offers students the opportunity to engage first hand with common problems of practice in higher education. Through exposure to real-world challenges, students will work on developing critical, collaborative, and equity-minded approaches to higher education leadership practices, policies, and pedagogies with local higher education faculty and administrators. The key aims of this exercise include developing leadership skills and improving the equity, access, and success of historically underrepresented students in academia.

Grading: Letter Graded

EDLD 217B - Equity-Minded Leadership in Higher Education as Praxis

3 unit(s)

Intensive experiential learning through applied consulting on living case studies aimed to challenge inequitable policies and practices to improve students' opportunities to learn in higher education.

Prerequisite(s): EDLD 217A

Grading: Letter Graded

EDLD 250 - Emancipatory Pedagogy in Higher Education

3 unit(s)

Explores theories and practices of teaching as a practice of freedom that strives for a stronger, flourishing democracy in which all people can meaningfully participate. Emancipatory pedagogy engages with students holistically and in mutualistic relations toward the shared construction of knowledge and dismantling of oppressive systems.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

EDLD 251 - Higher Education Teaching Practicum

3 unit(s)

Designed to be a practical application of the methods and pedagogies acquired in EDLD 212 and EDLD 250. The practicum student is mentored by an expert higher education instructor in one section of a course at a community college or four-year institution.

Prerequisite(s): EDLD 212 and EDLD 250

Grading: Letter Graded

EDLD 253 - Envisioning Emancipatory Leadership for Schools

3 unit(s)

Capstone course to synthesize personal and intellectual areas of growth. Students complete a 3-year action plan, outlining their core values, write a personal vision statement, cite current and lacking leadership skills and develop actionable goals to practice areas of growth.

Prerequisite(s): Concurrent Enrollment in or Completion of EDLD 204, or department permission.

Grading: Letter Graded

EDLD 280 - Individual Studies in Educational Leadership

1-4 unit(s)

Supervised individual study in specific fields of education not covered by offered courses.

Course may be repeated for credit for up to 30 units.

Prerequisite(s): Admission to Graduate program and department consent.

Grading: Credit/No Credit.

EDLD 298 - Higher Education Leadership Master's Capstone/Culminating Experience Course

3 unit(s)

Provides students in the Higher Education Leadership Master's Program with a structured learning experience as they develop and finalize their capstone projects required to satisfy degree completion.

Grading: Letter Graded

EDSP 150 - Communication, Leadership, and Social Justice

3 unit(s)

Formerly EDLD 150. Students utilize a critical lens to develop a foundation for analysis of oral and written communication in the community. Students expand personal written and oral communication styles to help amplify their voices in the community and in their careers.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded.

Electrical Engineering

EE 30 - Introduction to Programming Micro-Controllers for Electrical Engineering

3 unit(s)

Introduction to C language program development using an integrated development environment. Program development includes program design, development, debugging, testing and documentation. Electrical engineering application examples dealing with circuits, systems, data converters and signal processing concepts are used throughout the course.

Lecture 3 hours/Lab 3 hours.

Prerequisite(s): Allowed Declared Majors: Electrical Engineering.

Grading: Letter Graded

EE 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to

study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

EE 97 - Introductory Electrical Engineering Laboratory

1 unit(s)

Basic instruments and experimental techniques in electrical engineering. Oscilloscopes, function generators, frequency counters and multiple-use meters. Measurements of voltage, current, frequency response, transient response and computer simulation of circuits.

Lab 3 hours.

Prerequisite(s): Allowed Declared Majors: Any Engineering.

Corequisite(s): EE 98.

Grading: Letter Graded

EE 98 - Introduction to Circuit Analysis

3 unit(s)

Circuit laws and nomenclature, resistive circuits with DC sources, ideal operational amplifier, controlled sources, natural and complete response of simple circuits, steady-state sinusoidal analysis and power calculations.

Prerequisite(s): PHYS 51 with a C- or better. Allowed Declared Majors: Any Engineering.

Corequisite(s): MATH 33A or MATH 33LA.

Grading: Letter Graded

EE 98H - Honors Introduction to Circuit Analysis

3 unit(s)

A project and design based approach to the introduction of circuit laws and analysis methods such as nodal analysis, superposition, equivalent circuits and phasor analysis for circuits involving RLC and operational amplifiers.

Prerequisite(s): PHYS 51 (with a grade of "B" or better).

Corequisite(s): MATH 33A or MATH 33LA.

Grading: Letter Graded

EE 98W - Introduction to Circuit Analysis Workshop

1 unit(s)

Workshop designed to help all students excel in EE 98. Students work in groups on challenging circuit analysis problems to help them understand EE 98 concepts more deeply and lay the groundwork for success in engineering courses.

Corequisite(s): EE 98 or EE 98H

Grading: Credit/No Credit

EE 102 - Probability and Statistics in Electrical

3 unit(s)

Introduction to probability and statistical analysis for undergraduate EE students. Discrete probability theory, theory of single random variables, introduction to statistics and hypothesis testing, and EE applications.

Prerequisite(s): EE 112 with a grade of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 104 - Applied Programming in Electrical Engineering

3 unit(s)

Review of matrix algebra. Solution of linear, non-linear and ordinary differential equations. Interpolation and integration. Approximation of functions. Python programming in electrical engineering applications, which include signal analysis, neural networks, system modeling.

Prerequisite(s): EE 110 and EE 112 both with grades of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 106 - Fundamentals of Mechatronics Engineering

4 unit(s)

Foundational concepts in mechatronics including analog and digital electronics, sensors, actuators, microprocessors and microprocessor interfacing to electromechanical systems. Hands-on laboratory experiments with components and measurement equipment used in the design of mechatronic products.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): EE 98 and ME 30 (or CS 49C or EE 30 or CMPE 30 or their equivalents) (each with a grade of "C-" or better). For IT majors: TECH 60 and MATH 71 or MATH 71X (each with a grade of 'C-' or better).

Grading: Letter Graded

Cross-listed with ME 106. Mechanical Engineering is responsible for scheduling.

EE 110 - Circuits and Systems

3 unit(s)

Continuous-time signals, circuits and systems. Impulse response and convolution. Laplace and Fourier transforms. Frequency response, transfer function, poles/zeros, filtering. Application to passive and active circuits, and to basic control, communications, and bio-systems.

Prerequisite(s): EE 98 and MATH 33A or MATH 33LA (each with grade of C- or better). Allowed Declared Major: Electrical Engineering.

Corequisite(s): EE 110L.

Grading: Letter Graded

EE 110L - Continuous and Discrete Time Systems Lab

1 unit(s)

Matlab, LTspice, and lpython used to solve realistic continuous and discrete time signals, circuits and systems problems. Application to passive and active circuits, to basic control, communications, and bio systems.

Lab 3 hours.

Prerequisite(s): EE 98 and MATH 33A or MATH 33LA (each with grade of "C-" or better).

Corequisite(s): EE 110.

Grading: Letter Graded

EE 110W - Circuits and Systems Workshop

1 unit(s)

Workshop designed to help all students excel in EE 110. Students work in groups on challenging circuit analysis and systems problems to improve their understanding of concepts in EE 110 and lay the groundwork for success in future EE courses.

Prerequisite(s): EE 98 and MATH 33A or MATH 33LA (each with a "C-" or better).

Corequisite(s): EE 110 and EE 110L.

Grading: Credit/No Credit

EE 112 - Introduction to Signal Processing

3 unit(s)

Introduction to discrete-time signal processing. Sampling and aliasing. Frequency response, transfer function, poles/zeros. Z-transform. FIR and IIR filtering. The four Fourier transforms. Computing spectra and spectrograms. Bio-systems, speech, music, image processing applications with Matlab.

Prerequisite(s): EE 98 and MATH 33A (each with grade of C- or better) and Satisfactory Score on the Circuit Concepts and Problem Solving Placement Exam. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 118 - Digital Logic Circuit Design

4 unit(s)

Fundamentals of digital logic design. Boolean logic, MUXes, DEMUXes, decoders, encoders, comparators, arithmetic blocks, flip-flops, counters, registers, RAMs/ROMs, PLDs and FPGAs. Design of a simple computer CPU. Schematic capture and Hardware Description Language (HDL), particularly, Verilog.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): EE 97 and EE 98 both with grades of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 120 - Microprocessor Based System Design

4 unit(s)

Advanced algorithmic processes using MSI and SSI integrated circuits. Organization and interface requirements for a microcomputer. Hardware-software tradeoffs in digital systems.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): EE 118 with grade of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 122 - Electronic Design I

4 unit(s)

Design of circuits based on OPAMPS, diodes, MOSFETs and BJT's, as applied to the contemporary issues of biomedical devices and power generation (solar cell modules), and power usage. Electronic CAD tools (LTSPICE) will be used extensively, PCB board design.

Lecture 4 hours/lab 3 hours.

Prerequisite(s): EE 110 and EE 97 both with grades of "C-" or better. Allowed Declared Majors: Electrical Engineering.

Grading: Letter Graded

EE 124 - Electronic Design II

4 unit(s)

Analysis and design of Analog integrated circuits using Bipolar and CMOS transistors. Topics include current sources, active loads, differential amplifiers, frequency response, frequency compensation, output stages, feedback amplifiers and operational amplifiers.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): EE 122 and EE 128 both with grades of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 127 - Electronics for Biomedical Applications

3 unit(s)

Study of the fundamental concepts of electrical circuits relevant to the use and design of biomedical instruments and devices currently used for patient care using several examples.

Prerequisite(s): EE 98 with a grade of "C-" or better.

Grading: Letter Graded

EE 128 - Physical Electronics

3 unit(s)

Review of semiconductor theory. Methods of device fabrication; p-n junctions; bipolar junction transistors; field-effect transistors (FETS); MOSFETs; and equivalent circuits.

Lecture 3 hours.

Prerequisite(s): MATE 153 with a grade of "C-" or better. Allowed Declared Major: Electrical Engineering.
Grading: Letter Graded

EE 129 - Introduction to Integrated Circuits Processing and Design

3 unit(s)

Basic processes involved in fabrication of integrated circuits; semiconductor physics, material preparation, oxidation, diffusion; photolithographic, thin-film deposition and etching. Simple component layout and evaluation of device parameters.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): MATE 25 or MATE 153 with a grade of "C-" or better. Allowed Declared Majors: Any Engineering. Or Graduate/PBAC level.

Grading: Letter Graded

Cross-listed with MATE 129. Materials Engineering is responsible for scheduling.

EE 130 - Electric Machines and Drives

3 unit(s)

This course introduces the theory of operation and the control of electro-mechanical machines including DC machines, DC brushless machines, and AC synchronous machines and their electric drive systems. Applications include robotics, electric vehicle, and electric power generation.

Lecture 3 hours.

Prerequisite(s): EE 110 and EE 112 both with grades of "C-" or better.

Grading: Letter Graded

EE 132 - Theory of Automatic Controls

3 unit(s)

Theory of linear feedback control systems. Transfer functions and block diagrams; root-locus techniques; frequency analysis techniques; compensation; transducers and servo-system elements.

Prerequisite(s): EE 110 and EE 112 both with grades of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 134 - Power Systems

3 unit(s)

Introduction to power systems including: complex power, power factor correction, power quality, power flow analysis, grid steady state and transient stability, fault analysis, integration of renewable energy, theory and modeling of transformers, transmission lines, and synchronous generators.

Prerequisite(s): EE 110 and EE 112 both with grades of "C-" or better.

Grading: Letter Graded

EE 136 - Semiconductor Power Electronics

3 unit(s)

Study of power electronic circuits and applications including switch-mode regulators, AC-DC, DC-DC and DC-AC conversion, uninterruptible power supplies, variable speed drives, active filtering and harmonic cancellation; laboratory demonstrations. Applications include electric vehicle propulsion and spacecraft power systems.

Prerequisite(s): EE 122 with a grade of "C-" or better.

Grading: Letter Graded

EE 138 - Embedded Control System Design

3 unit(s)

Introduction to designing microcontroller-based embedded control systems using C programs to control input/output peripherals including general purpose I/Os, state machines, analog interfaces, pulse width modulation, digital filter implementation, design of control systems for motor, interrupt concepts, and real-time operating systems.

Lecture 2 hours/Lab 3 hours

Prerequisite(s): EE 112 and EE 120 both with grades of "C-" or better.

Grading: Letter Graded

EE 140 - Principles of Electromagnetic Fields

3 unit(s)

Static electromagnetic fields and waves using vector calculus methods. Development of Maxwell's Equations. Dynamic effect of time varying electromagnetic fields and its applications.

Prerequisite(s): PHYS 52, EE 110, and EE 110L all with grades of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 153 - Introduction to Digital Signal Processing

3 unit(s)

Digital signal processing fundamentals, discrete system theory, convolution, DFT, and design of IIR and FIR filters. MATLAB based lab exercises are used for verification of DSP principles, signal analysis, and design of filters for audio signals.

Prerequisite(s): EE 112 with a grade of "C-" or better.

Grading: Letter Graded

EE 160 - Principles of Communication Systems

3 unit(s)

Introduction to communication systems. Harmonics for analysis of amplifiers and amplitude modulators. Sampling and its application to frequency shifting. Communication receiver architectures: Direct-conversion and heterodyne. Amplitude modulators and demodulators. Basic binary modulation techniques.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): EE 112 with a grade of "C-" or better.

Grading: Letter Graded

EE 161 - Digital Communication Systems

3 unit(s)

Introduction to communication systems and noise. Binary communication systems. Pulse amplitude modulation. Digital modulation of amplitude, phase and frequency of a carrier signal. Modulation and signaling for wireless communication channels. Digital wireless communication using multiple antennas.

Prerequisite(s): EE 102 and EE 112 both with grades of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 165 - Photovoltaic Fabrication/Testing Lab

1 unit(s)

Laboratory course covering photovoltaic (solar cell) design, fabrication, and testing. TCAD simulation tools will be used in design. Fabrication processes will include cleaning, surface texturing, deposition, diffusion, metallization, photolithography, etching, and electrical testing.

Misc/Lab: Lab 3 hours.

Prerequisite(s): MATE 25 or MATE 153 with a grade of "C-" or better; or corequisite of MATE 129.

Grading: Letter Graded

Cross-listed with MATE 165. Materials Engineering is responsible for scheduling.

Sustainability Focused - SDG 7: Affordable and Clean Energy

EE 166 - Design of CMOS Digital Integrated Circuits

3 unit(s)

Analysis and design of MOS based combinational sequential digital integrated circuits. Industry standard CAD tools (Cadence) will be used extensively in homework and a group final project.

Prerequisite(s): EE 128 with a grade of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 168 - Microfluid Fabrication and Design

1 unit(s)

Hands-on design, fabrication, and testing of microfluidic devices. Processes including photolithography, soft lithography, and plasma bonding. Design problems for microfluidic devices. Introduction to microfluidics simulation.

Prerequisite(s): MATE 25 or MATE 153 or MATE 129 / EE 129.

Grading: Letter Graded

Cross-listed with MATE 168 / ME 168. Mechanical Engineering is responsible for scheduling.

EE 169 - Microelectromechanical Systems Fabrication and Design

1 unit(s)

Hands-on design, fabrication, and testing of micro electro-mechanical systems (MEMS). Processes including photolithography, etching, and metal deposition applied to MEMS. Design problems for MEMS transducer components. Introduction to MEMS simulation.

Misc/Lab: Lab 3 hours.

Prerequisite(s): MATE 25 or MATE 153 or MATE 129 / EE 129.

Grading: Letter Graded

Cross-listed with MATE 169 / ME 169. Mechanical Engineering is responsible for scheduling.

EE 171 - Introduction to Machine Learning for Electrical Engineers

3 unit(s)

Introduction to machine learning with hardware implementation. Topics include linear algebra and probability review, linear regression, multilayer perceptrons, stochastic gradient descent, and convolutional neural networks. Includes hands-on lab component in which students train neural networks using Keras and deploy the models to Field Programmable Gate Arrays (FPGAs).

Prerequisite(s): EE 102 (may be taken concurrently) and EE 118 (with grade of "C-" or better).

Grading: Letter Graded.

EE 172 - Introduction to Microwave Engineering

3 unit(s)

Topics in Microwave Engineering: Standard RF measurements, waveguide resonator and antenna. Transmission line theory, impedance matching, and design approach of selected microwave components. Emphasis will be on the fundamental principles and industrial practice of the designs. Commercial CAD tools.

Prerequisite(s): EE 98, PHYS 52, and MATH 33A or MATH 33LA (all with grades of "C-" or better). Allowed Declared Major: Electrical Engineering.

Corequisite(s): EE 140.

Grading: Letter Graded

EE 174 - Analog Peripheral for Embedded Systems

3 unit(s)

Introduction to analog peripherals for embedded systems such as ADC/DAC, DC-DC Converters, Energy harvesting and solar cells, near field communication, RF-IDs, phase lock loops, clock generators, displays and touch screens. Industry based projects and applications are integral to the course.

Prerequisite(s): EE 110 and EE 112 both with grades of "C-" or better. Allowed Declared Major: Electrical Engineering.

Grading: Letter Graded

EE 176 - Computer Architecture and Organization

3 unit(s)

Course introduces the principles of computer organization and the basic architecture concepts. The course emphasizes performance and cost analysis, instruction set design, addressing modes, processor arithmetic, processor data and control path, pipelining, data and control hazard, parallelism, memory technology, memory hierarchy and management, and I/O systems.

Prerequisite(s): EE 120 with a grade of "C-" or better.

Grading: Letter Graded.

EE 178 - Digital Design with FPGAs

3 unit(s)

Advanced Digital Design Technologies as they relate to synchronous digital systems. Requires student design projects that deal with the use of CAD tools for the Design, Simulation, and Implementation of Systems with FPGAs.

Prerequisite(s): EE 118 with a grade of "C-" or better.

Grading: Letter Graded

EE 180 - Individual Studies

1-3 unit(s)

Individual work on special topics arranged by the student and faculty mentor. Enrollment is handled by the EE department office. A completed and approved application is required.

Prerequisite(s): BS in Electrical Engineering Senior in good standing. Allowed Declared Major: Electrical Engineering. Not available to Open University Students.

Grading: Credit/No Credit

EE 181 - Fundamentals of Internetworking

3 unit(s)

Data communication concepts, protocols, algorithms; 7-layer OSI reference model and implementations; physical media (fiber, wire); switching systems; LAN architectures and components, Ethernet, FDDI, TCP/IP, and related standards.

Prerequisite(s): EE 118 with a grade of "C-" or better.

Grading: Letter Graded

EE 182 - Analog and Mixed-Signal IC Test Development

3 unit(s)

Introduction to analog and mixed-signal IC and component measurements and automated testing. Test specifications, methods, techniques, and interfaces. Measurement accuracy, correction, and calibration. Automated test equipment (ATE) hardware and software. DAC/ADC testing and DSP-based testing. Analog and mixed-signal design for test (DFT). Laboratory exercises and mini projects.

Prerequisite(s): EE 112, EE 118, and EE 122 all with grades of "C-" or better.

Corequisite(s): EE 102 can be taken concurrently.

Grading: Letter Graded

EE 183 - Electronics Test Design Engineering II

3 unit(s)

Best practices in Test methods and techniques; ATE Test hardware/software, Device characterization; Multi-system reliability; Device interface board design, building, debug; ATE development and Execution.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): EE 182 with grade "C-" or better.

Grading: Letter Graded

EE 189 - Special Topics in Electrical Engineering

3 unit(s)

Advanced topics in Electrical Engineering. Content varies from semester to semester.

Course may be repeated for credit when topic changes.

Prerequisite(s): Instructor consent/senior standing.

Grading: Letter Graded.

EE 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

EE 198A - Senior Design Project I

1 unit(s)

Team design project proposal, business plan, oral design presentations of the initial phases of the design project, a written and oral defense of the proposed design project. Global and social issues in engineering. Individual written reports on professional development plans.

Lab 3 hours

Satisfies SJSU Studies S: Self, Society & Equality in U.S. when taken as part of EE major sequence.

Prerequisite(s): Electrical Engineering Senior in good standing in major, ENGR 100W (with grade of "C" or better), EE 120, EE 122, and EE 128 (with grades of "C-" or better).

Pre/Corequisite(s): concurrent enrollment with ENGR 195A or completion of ENGR 195A or completion of GE Area S.

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: EE 198B, ENGR 195A and ENGR 195B.

Sustainability Related - SDG 7: Affordable and Clean Energy

EE 198B - Senior Design Project II

3 unit(s)

Implementation of group design projects initiated in EE 198A. Group oral and written reports. Integrate global and social issues in engineering.

Lab 9 hours.

Satisfies SJSU Studies V: Cultures and Global Understanding when taken as part of the EE major sequence.

Prerequisite(s): Electrical Engineering Senior in good standing in major, EE 198A with a grade of "C-" or better, ENGR 100W with a grade of "C" or better. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses.

Pre/Corequisite(s): Concurrent enrollment with ENGR 195B or completion of ENGR 195B or completion of GE Area V.

Grading: Letter Graded.

Note(s): Meets GE Areas S and V when course is taken in combination with: EE 198A, ENGR 195A and ENGR 195B.

Sustainability Related - SDG 7: Affordable and Clean Energy

EE 209 - Network Security

3 unit(s)

Network security protocols and applications, cryptography algorithms, authentication systems, intrusion detection, network attacks and defenses, system-level security issues, and building of secure systems.

Prerequisite(s): EE 281 or instructor consent.

Grading: Letter Graded

EE 210 - Linear System Theory

3 unit(s)

Comprehensive overview of signals and linear systems with discrete-time emphasis. System attributes. Fourier transform families and properties. Convolution and correlation. The 2-sided z-transform. FIR and IIR filters analysis and realizations. State variable modeling. Sampling, filtering, and other applications. Computer simulations.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

EE 220 - Radio Frequency Integrated Circuit Design I (RFIC Design I)

3 unit(s)

Study of transmitter and receiver architectures and their building blocks for modern wireless communication standards, high frequency modeling of passive and active circuit components realized in CMOS and

BiCMOS technologies, networks theory, wideband matching, nonlinearity and noise link budgets.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 221 - Semiconductor Devices I

3 unit(s)

Study of semiconductors in equilibrium and nonequilibrium conditions; principles of semiconductor device fabrication, p-n junctions; and junction transistors; device modeling for circuit analysis.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

EE 222 - Advanced Integrated Devices

3 unit(s)

Complementary Metal-Oxide Semiconductor (CMOS) device scaling; Silicon-On-Insulator (SOI) and 3D transistor technologies; Device modeling and simulation; Surveys on Wide-Band-Gap power electronics; 3D and cross-point memories, neuromorphic computing, opto-electronics and superconductor electronics.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 223 - Analog Integrated Circuits

3 unit(s)

Introduction to analog integrated circuits. Bipolar and MOS transistor models. Analysis and design of monolithic operational amplifiers. Frequency response. Feedback amplifier theory and design. Applications to specific case studies, such as phase-locked oscillators and wide-band amplifiers. Switched-capacitor filters.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 224 - High Speed CMOS Circuits

3 unit(s)

Analysis and design of digital integrated circuits; bipolar and MOS inverters and logic gates; semiconductor memories; gate arrays; standard cells; programmable logic array; computer-aided design; SPICE program is used extensively.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 225 - Introduction to Quantum Computing

3 unit(s)

Basic linear algebra with an emphasis on quantum computing will be introduced followed by quantum gates and quantum algorithms such as Shor's algorithm. Simulation and hardware implementation will be used to enhance the learning experience. Requires a minimal background in linear algebra and quantum mechanics.

Prerequisite(s): Graduate standing or instructor approval.
Grading: Letter Graded

EE 226 - Cryogenic Nanoelectronics

3 unit(s)

Introduces the cryogenic nanoelectronics used in emerging technologies, such as quantum computers. The cryogenic and room temperature properties of the devices and circuits will be discussed and contrasted. Design skills of nanoelectronics devices and circuits at cryogenic temperature will be emphasized.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EE 230 - Radio Frequency Integrated Circuit Design II

3 unit(s)

Low noise amplifiers, mixers, power amplifiers, LC voltage controlled oscillators, phase shifters, patch antennas and advanced layout to improve noise, stability, efficiency and bandwidth performance of nanoscale CMOS integrated circuits.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EE 231 - Automatic Control Theory

3 unit(s)

Fundamentals of state space techniques in the analysis and synthesis of dynamic control systems; relationship to classical control theory via the Laplace transform; controllability; observability; performance indices discrete systems; introduction to optimal control and Kalman filtering.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EE 237 - Vector Control of AC Machines

3 unit(s)

This course introduces modeling and control of electrical drive for AC motors and generators including induction, permanent magnet, and synchronous machines. The dynamic model, control methods, current regulation, and space vector modulation are discussed by both analysis and computer simulation.

Prerequisite(s): EE 210
Grading: Letter Graded

EE 238 - Advanced Power Electronics

3 unit(s)

Adv. study of switching regulators in power management, including energy conversion topologies, state space averaging techniques, assessing voltage mode/current mode control to embedded hardware. Applications include photo-voltaic /solar grid-tied inverters, active power factor correction, analysis, computer simulation.

Prerequisite(s): Graduate Standing
Grading: Letter Graded

Sustainability Focused - SDG 7: Affordable and Clean Energy

EE 239 - Advanced Applications of Power Converters

3 unit(s)

Covers advanced applications for power electronic converters including the design and simulation of power converters in renewable energy systems such as solar energy and wind energy, electrified transportation including electric vehicles and electrified aircrafts, and data centers.

Prerequisite(s): Graduate Standing or instructor consent.
Grading: Letter Graded

EE 250 - Probabilities, Random Variables and Stochastic Processes

3 unit(s)

Random variables, random processes, power spectral density, optimum linear systems, queuing theory.

Prerequisite(s): Graduate standing.
Grading: Letter Graded

EE 251 - Digital Communication Systems

3 unit(s)

Review of random processes. Gaussian noise. Sampling, quantization and pulse transmission. Bandlimited channels and equalization. Signal space analysis. Digital modulation techniques. Tradeoffs between power and transmission rate.

Prerequisite(s): EE 250.
Grading: Letter Graded

EE 252 - Advanced Communication Systems

3 unit(s)

Digital modulation techniques for power and bandwidth limited communication systems. Offset QPSK, GMSK, noncoherent modulation and detection. Multipath fading channels, diversity and combining methods.

Prerequisite(s): EE 250
Grading: Letter Graded

EE 253 - Digital Signal Processing

3 unit(s)

DSP systems analysis and design. Spectral analysis and spectrograms. FIR and IIR digital filters. Quantization effects. Decimation, interpolation, and sample rate conversion. Perfect reconstruction filter banks. The discrete wavelet transform and applications. Computer implementations.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

EE 254 - Machine Learning for Signal Processing

3 unit(s)

Comprehensive introduction to classical and modern data-driven machine learning for signal/image processing algorithms and applications. Optimal adaptive signal processing. Steepest and stochastic gradient descent implementations. General least-square linear regression. Basic signal/data classification algorithms. Introduction to deep learning implementations. Principal and independent components analyses. Sparse signal representation and sparsity promoting algorithms. Compressed sensing. Example applications.

Prerequisite(s): Graduate standing

Grading: Letter Graded

EE 257 - Machine Learning for Electrical Engineers

3 unit(s)

Introduction to machine learning for electrical engineers. Course covers statistical models for data analysis, inference, and prediction. Case studies and projects related to applications in Electrical Engineering.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 258 - Neural Networks

3 unit(s)

Fundamentals and applications of neural networks and learning processes. Course covers models of a neuron, perceptrons, Linear Mean Square (LMS) algorithm, multilayer perceptrons, back propagation algorithm, and radial basis function networks. Deep feedforward networks, regularization for deep learning, and optimization for deep models. Convolutional neural networks. Recurrent and recursive networks.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 259 - Selected Topics in Signal Processing

3 unit(s)

Advanced topics in signal processing. Content varies from semester to semester.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 260 - RFID Systems

3 unit(s)

This course gives an introduction to RFID systems. Emphasis is on RFID technology applications in biomedical devices, object tracking and identification. Complemented with practical laboratory experiments. A final project (written report and oral presentation) covers RFID applications in a topic of interest to the student.

Prerequisite(s): EE 251 or instructor consent.

Grading: Letter Graded

EE 263 - Digital Image Processing

3 unit(s)

Teaches the fundamental principles and algorithms for digital image processing and introduces students to computer vision and important applications. Topics include image formation, modeling, transforms, enhancement, segmentation, representation, feature extraction, and object recognition. Through a set of homework assignments and a comprehensive project, students will implement cutting-edge computer vision algorithms.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded

EE 265 - Software-Defined Radio Communications

3 unit(s)

Experimental approach to designing and building wireless communications. Topics include analog/digital transmission, ADC/DAC, and wireless channel modeling. Students are exposed to MATLAB, software defined radios (USRP boards), GNU Radio, GRC (GNU Radio Companion) in homework assignments and projects.

Prerequisite(s): EE 210 or instructor consent.

Grading: Letter Graded

EE 267 - Computer Vision with Artificial Intelligence Applications

3 unit(s)

Fundamental concepts of computer vision and image processing with applications in artificial intelligence (AI). The course first covers basic techniques of digital image processing and computer vision, including image convolution, transformation, segmentation, and pattern recognition. In connection with these techniques, the theory of Convolutional Neural Network (CNN) and related DNN is covered, with AI applications including object recognition and scene understanding for various autonomous systems.

Prerequisite(s): Graduate Standing or instructor consent.

Grading: Letter Graded

EE 270 - Advanced Logic Design

3 unit(s)

Logic design theory, advanced logic minimization, design and analysis of sequential circuits, asynchronous circuit design, logic circuit testing and design for testability. Review Verilog/VHDL. CAD tools are used for design, modeling and simulation.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

EE 271 - Digital System Design and Synthesis

3 unit(s)

In depth study of concepts and practices in modern digital system design, such as high-speed arithmetic, cache memory design, advanced pipelining and processor design. Verilog or VHDL is used for simulation and synthesis.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 272 - SoC Design & Verifi. with System Verilog

3 unit(s)

The course covers topics in System-on-Chip design and verification with SystemVerilog. Major topics include top-down SoC design; design metrics, techniques, and system-level synthesis; IP integration and system-level verification; SystemVerilog design hierarchy, data types, assertions, interfaces, verification constructs, and testbench structures.

Prerequisite(s): EE 271 or instructor consent.

Grading: Letter Graded

EE 273 - Logic Verification with UVM

3 unit(s)

Covers non-design System Verilog and Universal Verification Methodology (UVM). It introduces logic verification methodologies and techniques. No prior object oriented programming is assumed. UVM is practiced on sample designs in lab projects with industrial simulation tools.

Prerequisite(s): EE 271 or instructor consent.

Grading: Letter Graded

EE 274 - Quantum Computing Architectures

3 unit(s)

Introduce the hardware implementations of qubits. Josephson Junction superconducting qubit, spin qubit in quantum dots, trapped ion qubit, photonic qubit, and other types of physical qubits will be discussed. The manipulation and read-out techniques of the qubits will be covered.

Prerequisite(s): EE 225 or PHYS 161 or instructor approval.

Grading: Letter Graded

EE 275 - Advanced Computer Architectures

3 unit(s)

Performance metrics, instruction set architectures, instruction pipelining and pipeline hazards, instruction-level parallelism, multithreading, cache and virtual memory, I/O performance and advanced topics in storage systems, topologies and hardware/software issues of interconnection networks.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 277 - Embedded Systems Design

3 unit(s)

Design, implement, and test a processor on the FPGA hardware using high-level functional specifications, standard hardware description, and software programming languages.

Prerequisite(s): Graduate standing or instructor approval.

Grading: Letter Graded

EE 277A - Embedded SoC Design

3 unit(s)

Embedded system design challenge and metrics. Processor and compiler technologies. Software and hardware architectures for embedded system design. The design of co-processors, parallel processors, graphics processors and MPSOC processors. Basic concept of high performance computing (HPC)

Prerequisite(s): Graduate Standing.

Grading: Letter Graded.

EE 278 - Digital Design for AI and DSP

3 unit(s)

Digital design and FPGA/ASIC/VLSI-based implementation of high-performance DSP/AI/Machine Learning systems. FPGA and GPU architectures, various deep neural network design examples of video/imaging/speech and AI/machine learning include applications to object recognition for autonomous vehicles and speech recognition.

Prerequisite(s): EE 271.

Grading: Letter Graded

EE 279 - Special Topics in Digital Systems

3 unit(s)

Advanced topics in digital systems. Content varies from semester to semester.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 280 - Advanced Network Security

3 unit(s)

Current topics in advanced network security topics related to IoT systems, blockchain, SDN (software-defined networks), wireless networks, and cloud computing. Machine/deep learning with applications in network security. Course blends theory and practice.

Prerequisite(s): EE 281 and EE 209 or instructor consent

Grading: Letter Graded

EE 281 - Internetworking

3 unit(s)

Network layers, packet networks, ATM, SONET, TCP/IP protocols, high-performance switches and routers, queuing theory, error detection coding, quality of service, multicast, IPv6.

Prerequisite(s): EE 250 or equivalent. Allowed Declared Major: Electrical Engineering.
Grading: Letter Graded

EE 282 - Internet Security and Cryptography

3 unit(s)

Internet security principles, protocols and crypto hardware designs, private and public key cryptosystems, DES, RSA, and AES, GPF(p) and encryption engines, hash functions and digital signatures, authentication, key management and security assessments.

Prerequisite(s): EE 281 or equivalent.
Grading: Letter Graded

EE 282A - Reinforcement Learning for Multi-Robot Networks

3 unit(s)

Focus on decentralized multi-robot networks. Deep Q-Learning is applied to robot planning problems followed by strategies for reducing training complexity. Ad-hoc networking protocols are studied for inter-agent coordination, along with simulations of multi-robot tracking.

Prerequisite(s): EE 250.
Grading: Letter Graded

EE 283 - Broadband Communication Networking

3 unit(s)

Broadband Networks Overview, Tunneling, VPNs, and Multi-Protocol Label Switching (MPLS); All-Optical Networks, Architecture of High-Speed Switches and Routers, Data Center Networks, Network Virtualization, Software-Defined Networking (SDN), Packet Delay and Network Queueing Models, and Quality of Service.

Prerequisite(s): EE 281 or equivalent.
Grading: Letter Graded

EE 284 - VoIP and Multimedia Networks

3 unit(s)

Public-Switched Telephone Network and SS7 Protocol, Voice over IP (VoIP) Signaling Protocols, H.323, Session Initiation Protocol (SIP), Internetworking VoIP, Regular, and Wireless Cellular Networks, Media Gateways, Media Preparation and Compression, Codecs, Multimedia Networks, IPTV, VoD, Content Delivery Networks (CDNs).

Prerequisite(s): EE 281 or equivalent
Grading: Letter Graded

EE 286 - Mobile and Wireless Networking

3 unit(s)

This course covers recent and upcoming networking topics on mobile and wireless scenarios and applications. The course focuses on mobile and wireless network standards including cellular (LTE), Wi-Fi, Bluetooth, and routing algorithms including DSDV, DSR, TORA, and AODV.

Prerequisite(s): EE 250
Grading: Letter Graded

EE 287 - ASIC CMOS Design

3 unit(s)

CMOS ASIC design principles. Topics include ASIC architectures, cell libraries, synthesis issues, latches, clocking multiple clock synchronizers, delay calculation, timing closure, I/O specification, and testing.

Prerequisite(s): EE 271 or Instructor consent.
Grading: Letter Graded

EE 288 - Data Conversions/Analog Mixed Signal ICs

3 unit(s)

Study of different architectures for analog to digital convertors and digital to analog convertors. System level modeling & simulation. Design considerations and techniques for circuit implementation. Data conversion testing methods.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

EE 289 - Special Topics in Networking

3 unit(s)

Advanced topics in networking that are currently of high interest to both industry and academia. Content varies from semester to semester, and may include, but not limited to, network security, virtual private network, network availability and reliability, network management.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EE 295 - Technical Writing - Engineering Ethics

3 unit(s)

Students learn to analyze and write about issues in engineering ethics. Three types of ethics are explored: ethics of the person, the process, and the product.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing.
Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 7: Affordable and Clean Energy

EE 297A - MSEE Project Proposal

3 unit(s)

Written project proposal development for MSEE research/design project, subsequently culminating in EE 297B or EE 299B. Approval of project title and abstract by project advisor and graduate seminar participation required.

9 hours lab.

Prerequisite(s): Classified Standing, GPA of 3.0, satisfied GVAR requirement or EE 295 may be taken concurrently.

Grading: Credit/No Credit/Incomplete.

EE 297B - MSEE Project

3 unit(s)

Implementation of the research/design project, culminating the MSEE work proposed in EE 297A or EE 299A. Formal Master's project report and its formal defense required.

Prerequisite(s): EE 297A or EE 299A with grade of CR. Satisfaction of GVAR (EE 295 or ENGR 200W with C or better).

Grading: Letter Graded/RP.

EE 298 - Special Problems

1-6 unit(s)

Advanced individual work in electrical engineering.

Prerequisite(s): Graduate standing. Not available to Open University Students

Grading: Mandatory Credit/No Credit/RP

EE 298I - Electrical Engineering Internship Experience

1-3 unit(s)

For this course a student is employed in industry as an electrical engineering intern or in an equivalent position. The course supplements and supports student's plan of study.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Graduate standing.

Grading: Mandatory Credit/No Credit/RP

EE 299A - MSEE Thesis Proposal

3 unit(s)

Written Thesis proposal development for research/design, subsequently culminating the MSEE work in EE 299B or EE 297B. Approval of thesis title and abstract by thesis advisor and graduate seminar participation are required.

Prerequisite(s): Classified standing, minimum GPA of 3.0, satisfied GVAR requirement or EE 295 may be taken concurrently.

Grading: Credit/No Credit/Incomplete.

EE 299B - MSEE Thesis

3 unit(s)

Implementation of the research/design, culminating the MSEE work proposed in EE 299A or EE 297A. Formal Master's Thesis report and its formal defense required.

Prerequisite(s): EE 297A or EE 299A with grade of CR and satisfied GWAR requirement

Grading: Mandatory Credit/No Credit/RP

EE 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project beyond minimum required units, for cases in which final deliverables are still in progress.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): RP grade in a preceding thesis or project semester

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Elementary Education

EDEL 102 - Psychological Foundations of Education

3 unit(s)

Cognitive, affective and social/emotional development related to school settings. Theories of development, learning and instruction critically examined. Other topics include individual differences, measurement, evaluation, instructional goals, classroom management and diversity in the classroom.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

EDEL 108A - Curriculum: Reading/Language Arts

3 unit(s)

Elementary school language/literacy acquisition in culturally diverse classrooms; emphasis on listening, speaking, reading and writing within the context of theory and practice. May be repeated for different subtitle.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

EDEL 108B - Curriculum: Science

3 unit(s)

Elementary school science curriculum and theoretical approaches; emphasis on materials, methods, content and evaluation procedures for teaching science in elementary and middle schools in a multicultural and technological society. May be repeated for different subtitle.

Prerequisite(s): Upper division standing.
Grading: Letter Graded

EDEL 108C - Curriculum: Social Studies

3 unit(s)

Elementary school social studies curriculum and instruction with emphasis on the influence of ethnic, linguistic, cultural, economic, gender and disability factors on present day culture.

Prerequisite(s): Upper division standing.
Grading: Letter Graded

EDEL 108D - Curriculum: Mathematics

3 unit(s)

Elementary school mathematics curriculum and methodology relationships between instructional materials and how children construct knowledge; the role of technology and issues that bear on the teaching of school mathematics. May be repeated for different subtitle.

Prerequisite(s): Upper division standing.
Grading: Letter Graded

EDEL 108E - Teaching Reading in Linguistically and Culturally Diverse Classrooms

3 unit(s)

Assessing and teaching reading in diverse classrooms in grades K-8. Integrates research, theory and practice. Requires some classroom observation and working in schools with K-8 students.

Course is repeatable for up to 6 units.

Prerequisite(s): LING 108, ENGL 103 or LING 107.
Grading: Letter Graded

Note(s): Should be taken in final semester of undergraduate program.

EDEL 143A - Beginning Student-Teaching (Phase I)

1-6 unit(s)

Role of state and local government in education. Clinical observation of classroom, school and district organization. Emphasis on lesson planning.

Prerequisite(s): EDTE 162 or EDTE 262.
Grading: Credit/No Credit

EDEL 143B - Advanced Student-Teaching (Phase II)

1-10 unit(s)

Practicum in public school classrooms at two grade levels for student teaching experience; includes field

and campus seminar. Supervision by College of Education faculty.

Prerequisite(s): EDEL 143A.

Grading: Credit/No Credit

EDEL 143P - Introduction to Student Teaching

1 unit(s)

Clinical observation of classroom, school and district organization. Emphasis on lesson planning.

Activity 2 hours.

Repeatable for credit up to 2 units.

Prerequisite(s): Enrolled in a multiple subject credential program.

Grading: Credit/No Credit.

EDEL 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

English

ENGL 1A - First Year Writing

3 unit(s)

English 1A is an introductory course that prepares students to join scholarly conversations across the university. Students develop reading skills, rhetorical sophistication, and writing styles that give form and coherence to complex ideas for various audiences, using a variety of genres.

Satisfies A2: Written Communication.

Prerequisite(s): Completion of Reflection on College Writing

Grading: Letter Graded

ENGL 1AF - First-Year Writing: Stretch English I

3 unit(s)

Stretch I is the first semester of a year-long ENGL 1A that prepares students to join scholarly conversations across the university. Students develop reading skills, rhetorical sophistication, and writing styles that give form and coherence to complex ideas for various audiences, using various genres.

Prerequisite(s): Completion of Reflection on College Writing.

Grading: Credit/No Credit

ENGL 1AS - First-Year Writing: Stretch English II

3 unit(s)

Stretch II is the second semester of a year-long ENGL 1A that prepares students to join scholarly conversations across the university. Students develop reading skills, rhetorical sophistication, and writing styles that give form and coherence to complex ideas for various audiences, using various genres.

Satisfies A2: Written Communication.

Prerequisite(s): ENGL 1AF Stretch English I

Grading: Letter Graded

ENGL 1B - Argument and Analysis

3 unit(s)

English 1B is a writing course that focuses on argumentation and analysis. Through the study of literary, rhetorical, and professional texts, students will develop the habits of mind required to write argumentative and critical essays. Particular emphasis is placed on writing and reading processes. Students will have repeated practice in prewriting, drafting, revising, and editing, and repeated practice in reading closely in a variety of forms, styles, structures, and modes.

Satisfies C2: Humanities.

Prerequisite(s): ENGL 1A or ENGL 1AS with a C- or better.

Grading: Letter Graded

Note(s): ENGL 1B is not open to students who successfully completed ENGL 2.

ENGL 2 - Critical Thinking and Writing

3 unit(s)

Focuses on the relationship between language and logic in composing arguments. Students learn various methods of effective reasoning and appropriate rhetorical strategies to help them invent, demonstrate, and express arguments clearly, logically, and persuasively.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded

Note(s): ENGL 2 is not open to students who successfully completed ENGL 1B.

ENGL 10 - Great Works of Literature

3 unit(s)

Fiction, drama and poetry for non-English majors. Emphasis on critical appreciation of various literary forms.

Satisfies C2: Humanities.

Grading: Letter Graded

Note(s): No credit in the English major.

ENGL 20 - The Graphic Novel

3 unit(s)

Approaching the graphic novel as a form of popular literature, students examine the narrative and textual aspects of the form including the function of the text, its integration with the graphics, and formal aspects of narrative such as plot, character, theme, and symbol.

Satisfies C2: Humanities.

Grading: Letter Graded

ENGL 21 - Mystery and Detective Fiction

3 unit(s)

Examines mystery or detective fiction from its inception in the 19th century and follow it across the globe as the genre has been taken on and developed by a variety of cultures.

Satisfies C2: Humanities.

Grading: Letter Graded

ENGL 22 - Fantasy and Science Fiction

3 unit(s)

Students will examine works of literary fantasy and science fiction to understand them as expressions of human intellect and Imagination; to comprehend their historical and cultural contexts; and to recognize their diverse cultural traditions. Both contemporary and historical works will be studied.

Satisfies C2: Humanities.

Grading: Letter Graded

Note(s): No credit in the English major.

ENGL 30 - Literature and the Environment

3 unit(s)

Explores the ways in which writers and literary texts engage environmental issues and represent the natural world and humanity's place in it, paying close attention to issues of ecology, the landscape, conservation, sustainability, and human intervention/interference. Possible areas of inquiry include nature writing, ecofeminism, ecocriticism, environmental justice, postcolonial environments, and the Anthropocene.

Satisfies C2: Humanities.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

ENGL 40 - Contemporary World Fiction

3 unit(s)

A study of selected works of fiction in English and in English translation written since 1975. The course both focuses on international texts that address significant themes of our time and explores ways of reading and understanding literature.

Satisfies C2: Humanities.

Grading: Letter Graded

Note(s): No credit in the English major.

ENGL 50 - Beginnings to the American Experiment

3 unit(s)

Exploration of Anglo-Saxon, Medieval, Renaissance, and Early Colonial Writings in Britain, Europe, and America. Class engages literary text, literary history, and historical events that shape the literature and social constructs of the period.

Prerequisite(s): ENGL 1A.

Grading: Letter Graded

ENGL 60 - Literatures of the Atlantic World, 1680-1860

4 unit(s)

Examination of literatures arising out of the circulation of ideas and people across the Atlantic, with particular focus on the formation of distinctly British and American literary traditions within a global context.

Prerequisite(s): ENGL 1A.

Grading: Letter Graded

ENGL 70 - Emerging Modernisms and Beyond

3 unit(s)

Exploration of Modernist and twentieth-century writings. Class engages literary text, literary history, and historical events that shape the literature of the period.

Prerequisite(s): ENGL 1A.

Grading: Letter Graded

ENGL 71 - Creative Writing

3 unit(s)

Examinations of works of poetry, creative nonfiction and short fiction as expression of human intellect and imagination, to comprehend the historic and global cultural contexts, and recognize issues related to writing of diverse cultural traditions. Students will also write poetry, creative nonfiction, and short fiction.

Satisfies C1: Arts.

Grading: Letter Graded.

ENGL 78 - Introduction to Shakespeare's Drama

3 unit(s)

Reading of five or six representative plays. The Elizabethan era, dynamics of performance and close analysis of the plays.

Satisfies C2: Humanities.

Grading: Letter Graded

Note(s): No credit in the English major.

ENGL 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ENGL 96RWS - Integrating Reading and Writing

1 unit(s)

Co-requisite course offered in conjunction with a primary content-area course in which students engage reading and writing activities to learn disciplinary content. Activities support students to learn about their own learning processes as they build content knowledge in a discipline.

Course may be repeated for credit for up to 2 units.

Corequisite(s): Early Start or GE course

Grading: Credit/No Credit

ENGL 100A - Writing Competency Through Genres

3 unit(s)

Prepares students for 100W through drafting, feedback, and revision to demonstrate writing competency. Develops ability to analyze written genres used in the students' chosen disciplines as well as write analytical and reflective essays.

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE.

Grading: Letter Graded.

ENGL 100W - Writing Workshop

4 unit(s)

Integrated writing and literature course to develop advanced proficiency in college-level reading and writing that broadens and deepens understanding of forms and genres, audiences, and purposes of college writing developed in lower-division composition courses while developing mastery of the discourse and methods specific to the field of English literary studies. Repeated practice in close reading of literary texts, writing and revising informal and formal essays of literary analysis, and peer review of other students' writing.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: English. Other College of Humanities & Arts majors must ask for department consent.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR). Required of all English majors before they achieve senior standing.

ENGL 100WB - Written Communication: Business

3 unit(s)

Written communications for business majors; includes minimum of 8,000 words of writing spaced throughout the semester.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Allowed Declared Majors: All Business Administration majors, Industrial Arts, Industrial Technology, Professional & Technical Writing, Public Relations, Hospitality Management, Organizational Studies. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

ENGL 101 - Introduction to Literary Criticism

4 unit(s)

Study and application of various historical and contemporary approaches, including foundational twentieth-century theory as well as contemporary approaches. Applications of critical models to various literary, visual, and digital texts.

Prerequisite(s): ENGL 100W.

Grading: Letter Graded

ENGL 103 - Modern English

4 unit(s)

The growth and structure of modern English, including its phonology, morphology, syntax and semantics. Attention to social and regional varieties, with implications for language development and literacy among

native and nonnative speakers.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 105 - Seminar in Advanced Composition

4 unit(s)

Advanced expository writing.

Prerequisite(s): Upper-division standing required. Prior completion of ENGL 100W is suggested but not required.

Grading: Letter Graded

ENGL 106 - Professional and Technical Editing

4 unit(s)

Copy editing, substantive editing, and reorganization of technical documents. Review of grammar and punctuation to ensure technical mastery and ability to justify editing decisions. Graphics editing, access aids, and professional skills of an editor.

Prerequisite(s): ENGL 2 or A3 equivalent

Grading: Letter Graded

ENGL 107 - Professional and Technical Writing

4 unit(s)

Survey of professional and technical writing. Students learn how to write and design persuasive documents that get real things done in the real world. Projects include resumes, instructions (video and print), presentations, user manuals, and augmented reality apps. Includes learning digital tools used to author and publish writing in the current tech landscape such as DITA, Augmented Reality (AR), SnagIt, Adobe Premiere, and Madcap Flare.

Prerequisite(s): ENGL 2 or A3 equivalent.

Grading: Letter Graded

ENGL 108 - Gaming and Narrative

4 unit(s)

Study of the relationship between literary narrative theory and games, especially plots that branch and fork to produce different stories with different endings in a wide variety of interactive narrative material, including print, film, and software.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): Complements ART/ CS 108 - Introduction to Game Studies (programming & design).

ENGL 109 - Writing and the Young Writer

4 unit(s)

Emphasis on workshop approach to improve creative and expository writing skills and to transfer knowledge gained as a writer into practice as a prospective teacher of writing.

Grading: Letter Graded

ENGL 110 - UX Design and Visual Communication

4 unit(s)

Combines visual rhetorical theory with design techniques to teach writers about the visual aspects of written and digital communication. In this hands-on course, students design documents, including a poster, a book chapter, and promotional materials for local nonprofits.

Prerequisite(s): ENGL 100W

Grading: Letter Graded

ENGL 111 - Strategic Digital Content and Social Media Writing

4 unit(s)

Content writing and management, creating effective and ethical content, content auditing, integration, and assessment. Applications may include social media posts/campaigns, website copy, promotional materials, videos, podcasts, product and event descriptions, blog posts or articles, how-to/user guides, infographics, and FAQ pages. Activities include producing reports, conducting user research, and giving verbal presentations.

Prerequisite(s): Upper-division standing.

Grading: Letter Graded

ENGL 112A - Children's Literature

3 unit(s)

Study of literature for elementary and intermediate grades, representing a variety of cultures. Evaluation and selection of texts.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 112B - Literature for Young Adults

4 unit(s)

Study of selected literary material, representing a variety of cultures, chosen to motivate secondary school readers.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 113 - Gothic and Horror Fiction

4 unit(s)

Study of the rise of the Gothic from the 19th Century into the 20th & 21st- centuries. Texts may include novels, short stories, games, episodic television, movies, graphic novels, etc.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 115 - The Bible as Literature

4 unit(s)

Study of the Bible from the perspective of literature, examining key portions of the Bible, its subjects, themes, literary styles and genres, and contributions to Western Literature.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 116 - Myth in Literature

4 unit(s)

Relations between archetypes, artistic style and cultural context in masterworks, ancient through modern.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 117A - American Literature, Film, & Culture

3 unit(s)

Using both film and literature, course examines narratives that create and define cultural identities in the United States. A variety of cultural moments in the history of North America as depicted in both film and literature as well as the artistic practices used to shape those representations will be discussed.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

ENGL 117B - Global Film, Literature, and Cultures

3 unit(s)

Using films and literary works, students will appreciate and understand the narratives (myths and other stories) that create and define cultural identity, explore cultural interaction, and illustrate cultural preservation and cultural difference over time.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

ENGL 120 - Theatre History

3 unit(s)

Examines the historical roots, many manifestations, and diversity of theatrical performances with particular

attention to theatre's role within and between cultures.

Prerequisite(s): TA 11 or instructor consent.

Grading: Letter Graded

Cross-listed with TA 120. Film and Theatre is responsible for scheduling.

ENGL 122 - Topics in Comparative World Literature

4 unit(s)

An exemplary theme as treated in various literatures from different national sites, e.g., war, love, freedom, colonialism, environmental disaster.

Grading: Letter Graded

Cross-listed with COLT 122 / FORL 122 / HUM 122. English and Comparative Literature is responsible for scheduling.

ENGL 123A - Literatures of the Americas

3 unit(s)

Examines the literatures of the Americas including the cultural, historical, and political contexts from which they emerge.

Satisfies SJSU Studies Area V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

ENGL 123B - Literatures of Africa

3 unit(s)

Examines the literatures of Africa, including the historical, cultural, and political contexts from which they emerge.

Satisfies SJSU Studies Area V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

ENGL 123C - Literatures of the Pacific

3 unit(s)

Examines the literatures of the Pacific Rim, including Australia, New Zealand, and Samoa, and the historical, cultural, and political contexts from which they emerge.

Satisfies SJSU Studies Area V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

ENGL 123D - Literatures of Asia

3 unit(s)

Course examines the literatures of Asia including the historical, cultural, and political contexts from which they emerge.

Satisfies SJSU Studies Area V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

ENGL 125 - Ancient Literatures

4 unit(s)

A survey course that allows for a critical examination of influential texts from before 1350 CE.

Prerequisite(s): Upper division standing.

Grading: Letter Graded.

ENGL 126 - Holocaust Literature

3 unit(s)

Survey of literature written by survivors or witnesses of the Holocaust, the destruction of European Jewry during World War II, focusing upon diaries, memoirs, fiction, and occasionally poetry and drama. Writers may include Elie Wiesel, Primo Levi, Anne Frank, Charlotte Delbo.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with FORL 126 / HUM 126 / JWSS 126. English and Comparative Literature is responsible for scheduling.

ENGL 127 - Contemporary Theatre

3 unit(s)

Contemporary plays from 1980s to present and important theatre practices for this period. Explores

contemporary theatre by critically examining selected plays and productions of the last fifty years. The course will concentrate how the selected plays and productions express the diversity and complexity of postmodern society. The class will look at various performance styles and how they are a direct response and/or reaction to major changes in the social and political landscape. The course will focus on how theatre represents contemporary views of people, events and ideas through specific performance discourses.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with TA 127. Film and Theatre is responsible for scheduling.

ENGL 128 - Introduction to Playwriting

3 unit(s)

Writing in dramatic form: plot structure, characterization, content and theme. Analysis of plays. Exercises in writing.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with TA 128. Film and Theatre is responsible for scheduling.

ENGL 129 - Writing for Professional Publications

4 unit(s)

Professional and workplace writing where students learn new writing skills and expand their professional portfolio. Content may include writing for social media, marketing copy, nonprofits, and website content. Students write to get published on topics such as food, music, movies, video games, fashion, high-tech, and science. Class projects may include feature articles, reviews, interviews, marketing plans, the English Department magazine, an in-class podcast series, instructional videos, and a weekly updated blog.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 130 - Writing Fiction

4 unit(s)

Workshop in short stories or other short fiction. Beginning the novel in individual cases. May be repeated twice for credit.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): ENGL 71 (or equivalent) or instructor consent.

Grading: Letter Graded

ENGL 131 - Writing Poetry

4 unit(s)

Workshop in verse forms. Study of traditional and contemporary models. May be repeated twice for credit.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): ENGL 71 (or equivalent) or instructor consent.

Grading: Letter Graded

ENGL 133 - Reed Magazine

4 unit(s)

Student-edited and managed literary magazine. Contents selected from local, national and international submissions. Students urged to work on the magazine for the two semesters required for publication. Open to all majors. May be repeated once for credit.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 135 - Writing Nonfiction

4 unit(s)

Advanced creative writing workshop in literary nonfiction. Study of legacy and contemporary models.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): ENGL 71, ENGL 100W, ENGL 105, ENGL 129 or instructor consent.

Grading: Letter Graded

ENGL 139 - Visiting Authors

4 unit(s)

Study of works by contemporary writers participating in the Major Authors series and other programs sponsored by the Center for Literary Arts. Includes meetings with visiting authors and attending their various presentations. Recommended for the Creative Writing Concentration.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 140A - Old English

4 unit(s)

Introduction to the language, with short selections for translation.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 140B - Beowulf

4 unit(s)

This class is the second class in a year-long sequence of Old English. Students will be translating all 3,182 lines of Beowulf and investigating its linguistic, historical and cultural context as the first epic poem recorded in the English language.

Prerequisite(s): ENGL 140A or equivalent

Grading: Letter Graded

ENGL 141 - Medieval Literature

4 unit(s)

Middle English and continental literature, including such forms as the lyric, allegory, narrative, romance and biblically-based drama.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with HUM 141. English and Comparative Literature is responsible for scheduling.

ENGL 142 - Chaucer

4 unit(s)

Chaucer's language and major poetic works. The Legend of Good Women, The Canterbury Tales and Troilus and Cressida.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 144 - Shakespeare I

4 unit(s)

Major plays such as Twelfth Night, Henry IV, Part I and Hamlet.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with TA 144. English and Comparative Literature is responsible for scheduling.

ENGL 145 - Shakespeare and Performance

4 unit(s)

Course examines in depth several of Shakespeare's plays, specifically addressing issues of performance. We will discuss each play in the context of its original performance during Shakespeare's time and its life on stage and screen in the ensuing centuries.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with TA 145. English and Comparative Literature is responsible for scheduling.

ENGL 146 - Studies-Early Modern British Literature

4 unit(s)

Offers students the opportunity to study the poetry, drama, and prose of the influential early modern period in England. The course is broadly construed, enabling individual professors to focus on topics relating to their particular areas of expertise and/or interests.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 151 - 20th and 21st Century Poetry

4 unit(s)

Intensive study of selected poets from the twentieth and twenty-first centuries. Also developments in poetic craft and theory.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 153 - Studies in the British Novel Before 1900

4 unit(s)

Study of the origin, evolution, and spread of the British novel through the 18th and 19th centuries in a global context.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 156 - Black Women's Writing

3 unit(s)

Comparative analysis of the meaning and developmental stages of womanhood for women of African ancestry as depicted in the fiction of women of African ancestry. Emphasis on the role of race and culture in shaping contemporary conceptions of womanhood among Black women.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with AFAM 156 / WGSS 156. African American Studies is responsible for scheduling.

Sustainability Related - SDG 10: Reduced Inequalities

ENGL 157 - Topics in Rhetorical Analysis

4 unit(s)

Focused study of a topic in the theory and practice of rhetoric, such as feminist rhetorics, rhetoric of graphic design, political rhetoric, or rhetorics of new/social media. Check schedule of classes for current offering.

Course is repeatable for up to 8 units.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

ENGL 160 - Topics in American Literature

4 unit(s)

Focused study of a topic, period, or genre in American Literature. May include a range of course topics such as "Street Literature," "Ethnic American Memoir," "Narratives of Nation and Dystopia," and "Coming of Age in America." Topics may change; check catalog for current offering. Repeatable once for credit (8 units total) provided the subject matter is significantly different.

Course may be for credit for up to 8 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded.

ENGL 162 - Indigenous American Literatures

4 unit(s)

Study of texts by Indigenous American writers and storytellers, with genres including but not limited to oral traditions, fiction, poetry, oratory, and political discourse. Potential topics include issues of individual and tribal identity, survivance, and sovereignty.

Prerequisite(s): Upper division standing.

Grading: Letter Graded.

ENGL 163 - Asian American Literatures

4 unit(s)

Study of texts by Asian Americans from a range of periods or genres. Potential course topics include study of a single genre (such as memoir or drama) or a work by a single community (such as a class on Japanese American or Vietnamese American literature).

Prerequisite(s): Upper division standing.

Grading: Letter Graded.

ENGL 165 - Black American Literatures

4 unit(s)

Study of texts by Black American writers and storytellers, with genres including but not limited to oral traditions, fiction, poetry, autobiography, oratory, and political discourse. Potential topics include the development of a distinct literary tradition, Black-owned newspapers, freedom struggle, community formation, definitions of Blackness, and relevance of subject matter to current concerns of Black Americans.

Prerequisite(s): Upper division standing.

Grading: Letter Graded.

Cross-listed with AFAM 165. English and Comparative Literature is responsible for scheduling.

ENGL 166 - Latinx Literatures

4 unit(s)

Study of texts by Chicana and Latinx authors across forms and genres, including but not limited to poetry, fiction, drama, film, and graphic narrative. Potential topics include the politics of naming, histories of colonialism, ethnoracial and national identity, Indigenous and Afro-Latinx experiences, hyphenated and diasporic identities, and citizenship and migration.

Prerequisite(s): Upper division standing.

Grading: Letter Graded.

ENGL 167 - Steinbeck

4 unit(s)

Major works of John Steinbeck. Use of Steinbeck Center for research.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 168 - The American Novel

4 unit(s)

Study of the evolution of the novel in the United States, as well as the forces--political, intellectual, social, and cultural--that shaped the genre.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 169 - Ethnicity in American Literature

3 unit(s)

Study of expressions of ethnic and racial identity in American literature, with close attention to strategies of representation and resistance. Selected texts primarily arise out of the lived experiences of people of color, including Native Americans, Black Americans, Asian Americans, and Latinx Americans.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

ENGL 171 - Pop Cultures

4 unit(s)

Studies in popular literary and visual cultures across forms, mediums, and genres. Students critically examine historical and cultural contexts that shape 'popular' cultural productions and their reception.

Course can be repeated once for credit for up to 8 units provided the subject matter is significantly different.

Prerequisite(s): Upper-division standing.

Grading: Letter Graded.

ENGL 172 - The Arts in U.S. Society

3 unit(s)

Study of American arts and artists in their aesthetic, social, and political contexts, focusing on 20th and 21st centuries. Arts examined may include architecture, poetry, music, visual arts, dance, theatre, performance art, and fiction. Special emphasis on issues of cultural diversity and social justice.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CA 172 / MUSC 172 / TA 172. Humanities is responsible for scheduling.

ENGL 173 - Thinking About Contemporary World Arts

3 unit(s)

An interdisciplinary investigation of the connections between the contemporary arts and global cultures. Use of critical and creative thinking to develop global understanding and to explore personal and cultural identities.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CA 173 / MUSC 173 / TA 173. Humanities is responsible for scheduling.

ENGL 176 - The Short Story

4 unit(s)

Analysis and interpretation of selected short stories from the nineteenth century to the present.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 177 - Topics in Fiction Since 1900

4 unit(s)

Course will focus on different topics in modern fiction. Novels and short stories will be examined as works of art and as expressions of intellectual and social movements. May be repeated when course content changes.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 178 - Creative Nonfiction

4 unit(s)

The study of legacy texts in the genre of creative nonfiction and the historical influences which led to the genre's development.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 180 - Individual Studies

1-3 unit(s)

By arrangement with instructor and department chair approval.

Prerequisite(s): Upper division standing.

Grading: Credit/No Credit

ENGL 181 - Special Topics

4 unit(s)

Significant topics or themes in English or Comparative Studies.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 182 - Women, Gender, and Sexuality in Literature

4 unit(s)

Representations of women, gender, and sexuality in literature, with special attention to the intersecting structures of race, ethnicity, and class.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with WGSS 182. English and Comparative Literature is responsible for scheduling.

ENGL 183 - Major Authors

4 unit(s)

One major author's works. Author changes each semester.

Course may be repeated for credit when topic changes.

Prerequisite(s): Upper division standing.

Grading: Letter Graded.

ENGL 184 - Queer Literary Studies

4 unit(s)

Examination of queerness in literature, history, and culture. Explores queerness as it exists across historical contexts, tracing its manifestations in various literary genres and in other cultural artifacts such as film and television, including the ways gender and sexuality intersect with race, class, and ability, as they relate to identity formation and structures of power.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with WGSS 184 English and Comparative Literature is responsible for scheduling.

ENGL 190 - Honors Colloquium

4 unit(s)

Selected topics.

Prerequisite(s): Admission to departmental honors program.

Grading: Letter Graded

ENGL 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ENGL 199 - Writing Internship

3 unit(s)

Internship at a local industry, publisher, arts or public agency. Discussion of experiences and problems in the internship. Study of professional practices and demands, including those of career preparation and development.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): 3.0 GPA both overall and in English; no credit in English major.

Grading: Credit/No Credit

ENGL 201 - Materials and Methods of Literary Research

4 unit(s)

Use and evaluation of resource for literary research; problems in critical writing and literary history. Required for all English Masters students (to be taken as early as possible after achieving Classified standing).

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 202 - Poetic Craft and Theory

4 unit(s)

Poetry as a literary genre - its patterns and sub-types (such as the epic, lyric, pastoral, and elegy). Attention to the theories of poetics applied to practical criticism. Prior permission of graduate advisor may be repeatable once for credit.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

ENGL 203 - Narrative Craft and Theory

4 unit(s)

Study of prose fiction and nonfiction as a literary genre (with sub-genres) and an art which can be learned through imitation and analysis. Course emphasizes the formal and technical properties of prose narrative, with attention to Narratology. Prior permission of graduate advisor may be repeatable once for credit.

Grading: Letter Graded

ENGL 204 - Seminar in Modern Approaches to Literature

4 unit(s)

Study of modern approaches to the theory and practice of literary criticism. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 207 - Global Anglophone Literatures

4 unit(s)

The study of literature in English since 1900 produced outside the Anglo-American core countries.

Grading: Letter graded.

ENGL 208 - Seminar in Comparative Literature

4 unit(s)

Study of selected topics in comparative literature. Students will be encouraged to do some reading and research in a language other than English. With prior permission of graduate advisor repeatable twice for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 211 - Seminar in Twentieth Century Poetry

4 unit(s)

Intensive study of selected major English and American poets of the twentieth century. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 215 - Seminar in Myth and Symbolism

4 unit(s)

Comparative study of mythic and symbolic forms in literature, focusing on theory and a variety of texts. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 216 - Seminar in Medieval English Literature

4 unit(s)

Study of selected writings in medieval English literature and their continental sources. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 224 - Studies in English Early Modern Literature

4 unit(s)

Study of selected writers or topics of the sixteenth and seventeenth century.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified graduate standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 225 - Seminar in Shakespeare

4 unit(s)

A close study of selected plays and of selected major issues in Shakespearean criticism. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Cross-listed with TA 225. English and Comparative Literature is responsible for scheduling.

ENGL 228 - Seminar in Genre Studies

4 unit(s)

Provides focused study of a single genre of British and/or World Literature.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified graduate standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 230 - Seminar in Thematic Studies in British Literature

4 unit(s)

Focuses on specific themes in British Literature. Possible themes may include gender and sexuality, race and ethnicity, immigration, colonization, crime and punishment, politics and monarchical representation, etc.

Satisfies Graduation Writing Assessment Requirement (GWAR).

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

ENGL 232 - Seminar in Form and Genre Studies in British Literature

4 unit(s)

Focuses on forms and genres in British Literature. Possible forms/genres may include poetic forms (epic, lyric, sonnet, etc.), drama (comedy, tragedy, history, romance), prose works (essays, speeches, dialogues, travel narratives, etc.), novels, and so on.

Satisfies Graduation Writing Assessment Requirement (GWAR).

Repeatable for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

ENGL 233 - Seminar in Period Studies of British Literature

4 unit(s)

Focuses on specific periods in British Literature. Possible periods may include Medieval, Early Modern, Restoration, Romantic, Victorian, etc.

Satisfies Graduation Writing Assessment Requirement (GWAR).

Repeatable for credit for up to 8 units with program approval.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ENGL 240 - Poetry Writing Workshop

4 unit(s)

Poetics and poetry writing as preparation for thesis. Includes theory and practice of major trends in contemporary poetry. Intensive workshop experience. May be repeatable for credit for up to 12 units.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Graduate standing and admission via portfolio acceptance to the Writing Focus.

Grading: Letter Graded

ENGL 241 - Fiction Writing Workshop

4 unit(s)

Fiction writing as preparation for thesis. Study of canonical and contemporary fiction and fiction produced by students. Intensive workshop experience. May be repeatable for credit for up to 12 units.

Course may be repeated for credit for up to 12 units.

Grading: Letter Graded

ENGL 242 - Nonfiction Writing Workshop

4 unit(s)

Nonfiction writing as preparation for thesis. Study and critique of canonical and contemporary nonfiction. Intensive workshop experience. May be repeatable for credit for up to 12 units.

Course may be repeated for credit for up to 12 units.

Grading: Letter Graded

ENGL 253 - Seminar in Period Studies of American Literature

4 unit(s)

Focuses on a period of American literature such as Colonial, Revolutionary/Federal, Romantic, Realist, Modernist, Post-modernist. With prior permission of graduate advisor may be repeatable once for credit .

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 254 - Seminar in Genre Studies of American Literature

4 unit(s)

Focuses of a genre of American Literature such as poetry, the novel, the short story, drama, autobiography, the personal and/or philosophical essay. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 255 - Seminar in Thematic Studies of American Literature

4 unit(s)

Focuses on development of a theme in American Literature. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 256 - Seminar in Twentieth Century British Literature

4 unit(s)

Study of selected British writers since 1900. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGL 257 - Seminar in the History of Rhetoric

4 unit(s)

Study of rhetorical theory and practice from classical to modern times.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

ENGL 259 - Seminar in Composition Studies

4 unit(s)

Study of current approaches to composition.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

ENGL 281 - Special Topics

4 unit(s)

Significant topic or area reflecting trends and changes in the field. Provides students with an opportunity to gain specialized or advanced knowledge in a small-group setting.

Grading: Letter Graded

ENGL 291 - Lit Practicum

4 unit(s)

This course prepares Creative Writing graduate students to take the MFA exam and develop and begin writing an MFA thesis, customize the MFA exam reading list, prepare to take the MFA comprehensive exam, draft the thesis abstract and thesis preface.

Prerequisite(s): Approval of thesis proposal.

Grading: Credit/No Credit/Incomplete.

ENGL 297 - MA Comprehensive Exam Preparation

2 unit(s)

Workshop in writing and preparing for the two-part comprehensive masters examination.

Course may be repeated for credit for up to 2 units.

Grading: Letter Graded/RP.

ENGL 298 - Special Study

1-6 unit(s)

Advanced and individual research and projects.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit/Incomplete.

ENGL 299 - University Thesis

1-6 unit(s)

Supervised study. Completed theses are approved by the university and may at some point be uploaded to ProQuest, ScholarWorks or other digital thesis repository.

Prerequisite(s): Advancement to candidacy and successful completion of ENGL 291, assembly of Thesis Committee, and thesis proposal.

Grading: Mandatory Credit/No Credit/RP

ENGL 299D - Departmental Thesis

1-6 unit(s)

Supervised study. Completed thesis is approved by department and not uploaded to ProQuest, ScholarWorks or other digital repository. Recommended for students who wish to protect copyright of creative work for future publication.

Repeatable for credit.

Prerequisite(s): Advancement to candidacy and successful completion of ENGL 291, assembly of Thesis Committee, and thesis proposal.

Grading: Credit/No Credit/RP.

ENGL 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

English Education

ENED 184Y - Student Teaching II - Classroom Teaching

4 unit(s)

Minimum of 75 periods of classroom teaching, laboratory or field teaching in appropriate subject, grades 7-12, plus related school activities and seminar. Course is repeatable for credit in the same term.

Prerequisite(s): ENED 353.

Grading: Credit/No Credit

ENED 184Z - Student Teaching III - Classroom Teaching

4 unit(s)

See ENED 184Y for course description.

Course may be repeated for credit for up to 8 units.

Grading: Credit/No Credit

Note(s): May be in a different subject/school and will be at a different grade level. Includes final summary project for student teaching.

ENED 353 - Methods of Teaching English

4 unit(s)

Theory and practice of teaching literature and language arts to a diverse student population. Strategies for planning and implementing curricula appropriate to junior and senior high school.

Grading: Letter Graded

ENED 365 - Seminar in English Education

2 unit(s)

Topics in English Education for middle and high school English teachers.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Acceptance into the English Credential Program.

Grading: Credit/No Credit

Entomology

ENT 101 - Insect Diversity

4 unit(s)

Introduction to biology, ecology and behavior of insects. Ways in which insects affect humans and the environment. Students collect, curate and identify common families of insects.

Lecture 2 hours/lab-field 6 hours.

Prerequisite(s): BIOL 31 (with a grade of "C" or better); Must be a declared major in Biological Sciences or

Forensic Sciences, other major with instructor consent.

Pre/Corequisite(s): BIOL 118 (with a grade of "C" or better) or instructor consent.

Grading: Letter Graded

Sustainability Related

ENT 106 - Forensic Entomology

3 unit(s)

Examines the science and methodology used to collect, analyze, and present information regarding insects and other arthropods that are important in legal investigations.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 30 and BIOL 31 (with a grade of "C-" or better in each), or instructor consent. Must be a declared Biology or Forensic Science Major (all).

Grading: Letter Graded

Cross-listed with FS 106. Biological Sciences is responsible for scheduling.

ENT 113 - Principles of Systematics

3 unit(s)

Students gain the understanding and skills needed to taxonomically study biodiversity, including the use of morphological and DNA sequence characters to examine phylogeny, and use of a range of biodiversity research techniques and tools.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 113 / BOT 113 / ZOOL 113. Biological Sciences is responsible for scheduling.

ENT 114 - Functional Morphology

3 unit(s)

Develops understanding and skills needed to taxonomically study biodiversity, including the use of morphological and DNA sequence characters to examine phylogeny, and use of a range of biodiversity research techniques and tools.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 114 / BOT 114 / ZOOL 114. Biological Sciences is responsible for scheduling.

ENT 143 - Biogeography

3 unit(s)

Examination of the patterns of biodiversity over space and through time. Using data and models from a variety of sources including botany, zoology, ecology, evolutionary biology, paleontology, and geology, effects of isolation, elevation, and latitude are examined to understand spatial patterns of biodiversity.

Prerequisite(s): BIOL 31 or equivalent (with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 143 / BOT 143 / ZOOL 143. Biological Sciences is responsible for scheduling.
Sustainability Related - SDG 15: Life on Land

ENT 180 - Individual Studies

1-4 unit(s)

Advanced lab work in entomology.

Course is repeatable for credit.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Credit/No Credit

ENT 185 - Seminar in Entomology

1 unit(s)

Current entomological literature and research and historical development of various entomological concepts.

Prerequisite(s): Must be a declared Biology Major (all).

Grading: Letter Graded

ENT 186 - Senior Thesis

2-4 unit(s)

Advanced laboratory or field research under supervision of faculty member, culminating in a senior thesis.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Credit/No Credit

ENT 281 - Advanced Laboratory Skills in Entomology

3 unit(s)

Advanced lab work in entomology.

Prerequisite(s): MA graduate standing.

Grading: Credit/No Credit

ENT 282 - Entomology Internship

3 unit(s)

Professional career development and/or individualized preparation for culminating graduate experience.

Prerequisite(s): Graduate standing.

Grading: Credit/No Credit

ENT 283 - Directed Readings in Entomology

2 unit(s)

Directed reading assignments in entomological literature including but not limited to: research, governmental guidelines/protocols/procedures and risk assessment/management.

Prerequisite(s): MA graduate standing.

Grading: Letter Graded

Environmental Studies

ENVS 1 - Introduction to Environmental Issues

3 unit(s)

What effects are human activities having on the natural environment and our quality of life? Discover the technical and social causes of environmental degradation; learn how your personal and career choices can protect the environment for current and future generations.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded.

Sustainability Focused - SDG 12: Responsible Consumption and Production

ENVS 10 - Life on a Changing Planet

3 unit(s)

An introduction to basic knowledge and theory in the life sciences, focusing on the theme of environmental change. Examines challenging issues in biology and methods for evaluating conflicting data and claims. Develops students' analytical and writing skills.

Satisfies B2: Life Science.

Prerequisite(s): As required for Core GE courses in B2.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

ENVS 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ENVS 100W - Environmental Research and Writing

3 unit(s)

Advanced research and writing skills for future environmental professionals. Focus on issues, literature and challenges associated with environmental writing. Emphasis on writing for technical and general audiences.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

Sustainability Focused - SDG 4: Quality Education

ENVS 105 - Environmental Change and Problems, San Francisco Bay Area

3 unit(s)

Systematic inquiry into physical environments of the San Francisco Bay Area, with emphasis on impacts and changes to those systems by human action. Analysis of public action and policies regarding regional environmental issues.

Prerequisite(s): ENVS 1 and ENVS 100W.

Grading: Letter Graded

Note(s): Offered only occasionally.

Sustainability Focused - SDG 17: Partnerships for the Goals

ENVS 106 - Exploring Ocean Environments

3 unit(s)

Understand human interactions with marine environments by exploring the ocean as a place of socio-ecological encounter. Students learn and employ interdisciplinary approaches to conceptualizing, knowing, exploiting, and managing ocean environment.

Grading: Letter Graded

Sustainability Focused - SDG 14: Life Below Water

ENVS 107 - Introduction to Environmental Economics and Policy

4 unit(s)

Analysis of basic economic and political factors related to the environmental crisis. Surveys policy approaches to the problem: regulation, taxes, subsidies, cost benefit analysis.

Lecture 3 hours/Lab 2 hours.

Prerequisite(s): ECON 1B or instructor consent.

Grading: Letter Graded

Cross-listed with ECON 107. Environment Studies is responsible for scheduling.
Sustainability Focused - SDG 17: Partnerships for the Goals

ENVS 108 - Cost-Benefit Analysis

4 unit(s)

Theory and practice of cost-benefit analysis applied to various topics including public projects and environment. Welfare foundations of CBA, valuation of goods (such as clean air, wilderness, and sports arenas), discounting future values and cost.

Prerequisite(s): ECON 1B and ECON 3 or STAT 95, or instructor consent

Grading: Letter Graded

Cross-listed with ECON 108. Economics is responsible for scheduling.
Sustainability Focused - SDG 12: Responsible Consumption and Production

ENVS 110 - Resource Analysis

4 unit(s)

Quantitative analysis of Earth's natural resources. Topics typically include the status and trends of resources such as topsoil, agriculture, water, energy, wildlife and the impacts of human population growth on these resources. Emphasis is on problem solving and computational methods applied to resource management problems.

Misc/Lab: Lecture 4 hours/lab 3 hours.

Prerequisite(s): ENVS 1, ENVS 10, STAT 95.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

ENVS 111 - Geology and the Environment

3 unit(s)

The effect of Earth processes on humans and their structures. Environmental problems related to earthquakes, landslides, minerals, energy, water and urban growth.

Lecture 3 hours/field trips.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with GEOL 111. Geology is responsible for scheduling.
Sustainability Focused - SDG 1: No Poverty

ENVS 113 - Atmospheric Pollution

3 unit(s)

Descriptive discussion of the sources, effects and fates of pollutants in the atmosphere. Interaction of pollutants and weather systems, including acid precipitation, ozone destruction; air pollution policy and regulations.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with METR 113. Meteorology and Climate Science is responsible for scheduling.

Sustainability Focused - SDG 13: Climate Action

ENVS 116 - Solar Energy Analysis

3 unit(s)

Provides a comprehensive overview of sustainable solar energy resources, economics, and policy. Includes a review of basic solar energy physics and interdisciplinary analysis of economic, social justice, and environmental strategies for a solar powered civilization.

Grading: Letter Graded.

Cross-listed with DSIT 116. Environmental Studies is responsible for scheduling.

Sustainability Focused - SDG 7: Affordable and Clean Energy

ENVS 117 - Human Ecology

3 unit(s)

Diversity and similarity of human adaptation, cultural evolution, cultural change and environmental modification in African, Asiatic, Oceanic and Latin American cultural groups. Emphasis: traditional non-Western conservation practices and their lessons for the modern-day resource manager.

Prerequisite(s): ENVS 1, ENVS 10 and ENVS 100W, or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

ENVS 119 - Energy and the Environment

3 unit(s)

Introduces students to the sources of energy that fuel industrial civilization and the environmental impacts of energy extraction, distribution, and consumption. Explores a range of approaches to moving society toward a more sustainable energy future.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Cross-listed with ENGR 119. Environmental Studies is responsible for scheduling.
Sustainability Focused - SDG 7: Affordable and Clean Energy

ENVS 121 - Population and Global Change

3 unit(s)

Impact of population changes on countries, regions, and their environments. Demographic comparisons of developed and developing societies from perspectives of land use, economics and politics.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with GEOG 121. Urban and Regional Planning is responsible for scheduling.
Sustainability Focused - SDG 17: Partnerships for the Goals

ENVS 122 - Borderlands and the Environment

3 unit(s)

Comparative study of environmental issues in borderland regions, which encompass environmental, economic, cultural, political and social processes surrounding a geopolitical border. Investigation of historical, cultural, and political causes and responses to environmental problems. Analysis of understandings of territory, nation-states, and exclusion based on theories in border studies, environmental studies, and the study of social movements.

Prerequisite(s): ENVS 1 or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 17: Partnerships for the Goals

ENVS 124 - Introduction to Environmental Law

3 unit(s)

Development, interpretation, application and enforcement of environmental laws, regulations and legal policies by legislatures, courts, administrative agencies and citizens. Examination of air and water quality, hazardous materials, workplace, land use and wetlands regulation, international, ethical and efficacy issues.

Prerequisite(s): ENVS 1 or Instructor Consent.

Grading: Letter Graded

Cross-listed with POLS 124. Environmental Studies is responsible for scheduling.
Sustainability Focused - SDG 17: Partnerships for the Goals

ENVS 126 - Environmental Ethics and Philosophy

3 unit(s)

Extensions and applications of Kantian, Lockean, consequentialist and other philosophical theories of value to problems of the environment such as pollution, global warming, species depletion and overpopulation.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with PHIL 126. Philosophy is responsible for scheduling.
Sustainability Focused - SDG 4: Quality Education

ENVS 127 - Community-Based Participatory Research

3 unit(s)

This course integrates interdisciplinary theory and practice in developing a situated understanding of community-based participatory research (CBPR) toward redressing environmental inequities. Students will apply these theories and practices in their own environmental research and advocacy projects regarding local environmental issues.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

Cross-listed with SOCI 127. Environmental Studies is responsible for scheduling.

ENVS 128 - Water Resource Management

3 unit(s)

Water uses and supplies; water resource measurement methods; hydrology; erosional processes; sediment production and transport particularly on Northern California coastal watershed; flood hazards and methods of control; groundwater and groundwater aquifers; water quality.

Prerequisite(s): ENVS 129 and STAT 95 or appropriate math course; or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 6: Clean Water and Sanitation

ENVS 129 - Water Policy in the Western U.S.

3 unit(s)

Water resource development; federal reclamation policy; water law and water rights; interbasin transfers; Colorado River, Central Valley Project and State Water Project; groundwater overdrafting; agricultural water and water pricing.

Prerequisite(s): ENVS 1 or Instructor Consent.

Grading: Letter Graded

Sustainability Focused - SDG 6: Clean Water and Sanitation

ENVS 130 - Energy Policy Analysis

3 unit(s)

Energy policy questions and examination of choices including energy pricing, options for controlling oil imports, incentives for reducing consumption, allocation and end use controls, synthetic fuel production, offshore oil development.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 7: Affordable and Clean Energy

ENVS 131 - Air Pollution Meteorology

3 unit(s)

Quantitative description of contaminants in the atmosphere: sources, dispersion and sinks; their effects on atmospheric energy balance and condensation.

Prerequisite(s): METR 121B or instructor consent.

Grading: Letter Graded

Cross-listed with CHE 131 / METR 131. Meteorology and Climate Science is responsible for scheduling.

Sustainability Focused - SDG 3: Good Health and Well-Being

ENVS 132 - Solar Home Design

3 unit(s)

Techniques for designing environmentally-sensitive, healthy, passive solar homes via site selection, energy conservation, lighting, non-hazardous natural building materials. Residential passive solar heating and cooling approaches for retrofits and new construction. For homeowners, teachers, professional designers and architects.

Prerequisite(s): ENVS 1 or instructor consent.

Grading: Letter Graded

Cross-listed with DSIT 132. Environmental Studies is responsible for scheduling.

Sustainability Focused - SDG 7: Affordable and Clean Energy

ENVS 133 - Sustainable Energy Strategies

3 unit(s)

Challenges and opportunities facing sustainable energy pathways for heat, fuel, and electricity with a focus on energy efficiency, solar, wind, geothermal, bioenergy, alternative modes of transportation and other energy consuming infrastructures.

Grading: Letter Graded.

Sustainability Focused - SDG 7: Affordable and Clean Energy

ENVS 135 - U.S. Environmental Policy

3 unit(s)

Inquiry focuses on environmental pollution, public attitudes toward environmental problems, interest groups involved in formulation of policy, and the role of government policy makers in shaping the environmental agenda.

Grading: Letter Graded

Cross-listed with POLS 135. Political Science is responsible for scheduling.

Sustainability Focused - SDG 17: Partnerships for the Goals

ENVS 136 - Introduction to Land Use Planning

4 unit(s)

Land use and facilities planning practices in the context of American cities, emphasizing interrelationships between various land uses and public facilities and service requirements. Study of the role of public law in addressing urban growth and environmental change issues.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 136. Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 137 - Green Building Design Issues

3 unit(s)

Provides an overview of green building design strategies based on renewable energy, water conservation, healthy interior design, beneficial building orientation, native landscaping, sustainable building materials; includes economics, policy, and green building auditing and certifications.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

ENVS 140 - Politics and the Environment

3 unit(s)

Application of different political strategies to local issues examined through examples from specific environmental challenges facing the Bay Area. Considers relative contributions of the public, elected officials, government employees and interest groups in environmental decision-making.

Prerequisite(s): ENVS 1, ENVS 107 and ENVS 124 or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 142 - Introduction to Environmental Planning

4 unit(s)

Environmental sustainability and its application to local planning. Review of regulatory tools and legislation that underlie most environmental planning and current environmental planning topics. Course may be repeated for credit when topic changes.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 142. Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 144 - California Wetland Controversies

4 unit(s)

Impact of agriculture, urbanization and other human land uses upon the California coastal wetlands with emphasis on current environmental problems and controversies. State public agencies concerned with vital environmental problems and analysis of current environmental legislation.

Lecture 2 hours/lab 4 hours.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): ENVS 1 or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

ENVS 146F - Communication and the Environment

4 unit(s)

Examination of communication in environmental issues, especially conflicting values and modes of discourse that assume different meanings of human-nature relationship. Emphasis on environmentalism as popular movement, rhetoric of radical ecology and the technical discourse of environmental policy administration.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with COMM 146F. Communication Studies is responsible for scheduling.

Sustainability Focused - SDG 4: Quality Education

ENVS 148 - Sustainable Materials Management

4 unit(s)

Focuses on practical understanding and approaches to managing discarded materials for sustainability. An interdisciplinary perspective that includes politics, business, economics, marketing, science, and environmental principles. Provides direct experience through field trips and service learning.

Misc/Lab: 3 hours lecture/ 2 hours lab

Prerequisite(s): ENVS 1 or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

ENVS 150 - Introduction to Environmental Thought

3 unit(s)

An introduction to significant works in the field of environmental studies. Topics covered include preservation, conservation, biocentrism, environmental justice, eco-feminism, deep ecology, and environmental activism.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all

SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

ENVS 151 - Race, Class and the Environment

3 unit(s)

Analysis of the relationship between the environmental crisis and people of color and poor communities in the U.S., emphasizing the interplay among race/ethnicity, class and politics in the struggle for environmental justice and survival by communities of color and poor people.

Satisfies SJSU Studies Area R - Earth, Environment, and Sustainability

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): This course must be passed with a C- or better to satisfy the CSU graduation requirement.

Cross-listed with AFAM 151. African American Studies is responsible for scheduling.

Sustainability Focused - SDG 10: Reduced Inequalities

ENVS 152 - Globalization and the Environment

3 unit(s)

Scientific approach to goods distribution worldwide, and environmental consequences of shipping materials and packaging, which when discarded become waste. Mutual interests of commerce and environment.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with PKG 152. Environmental Studies is responsible for scheduling.

Sustainability Focused - SDG 12: Responsible Consumption and Production

ENVS 154 - Sustainable Agriculture

4 unit(s)

Analysis of and practicum in environmentally sustainable methods of food production, emphasizing biological diversity, water conservation, air quality, social equity and economic justice. Special focus on primary research in natural and social sciences for sustainable agriculture. Field trips and labs.

Misc/Lab: Lecture 3 hours/lab 2 hours.

Prerequisite(s): ENVS 1 and GE B2 course, or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 2: Zero Hunger

ENVS 156 - Introduction to Local Transportation Planning

4 unit(s)

Examination of transportation planning issues addressed at the neighborhood and municipal level such as bicycle and pedestrian planning, traffic calming, and parking policy.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 156. Urban and Regional Planning is responsible for scheduling.

Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

ENVS 158 - Environmental Education

3 unit(s)

Education of individuals can make a difference in protecting the environment. Comprehensive overview from the perspective of schools, American culture and law. Interdisciplinary approaches for correcting conditions created by modern living, energy and environmental demands.

Prerequisite(s): ENGL 1A and ENGL 2; upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

ENVS 159 - Nature and World Cultures

3 unit(s)

The influence of industrialization and globalization on earth and the environment as seen through culture.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with AMS 159 / HUM 159. Humanities is responsible for scheduling.

Sustainability Focused - SDG 15: Life on Land

ENVS 161 - California Wildlands

4 unit(s)

Discussion and field analysis of California's wildlands, including the range of biodiversity, associated agencies, environmental issues, policy choices and management approaches to protect different types of open space.

Misc/Lab: 3 hours lecture/ 2 hours lab

Prerequisite(s): ENVS 1 and ENVS 100W

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

ENVS 165 - National Parks

3 unit(s)

An exploration of the history, philosophy, and science of park and wilderness preservation. Includes site visits to selected parks and wilderness areas.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with GEOG 165. Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 15: Life on Land

ENVS 166 - Nature and Conservation Photography

4 unit(s)

Still photography of nature and illustrative conservation subjects in both color and black and white. Theory critique sessions supplemented with field experience. May be repeated for a maximum of 8 units.

Misc/Lab: Lecture 2 hours/activity 4 hours.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Photo experience or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

ENVS 167 - Managing Environmental Issues

3 unit(s)

The management of environmental issues, including the relationship of business to the natural environment; the public policy context of management decision-making; and the greening of the corporation and implications for strategic management, operations, human resources, marketing and accounting.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with BUS5 167. Global Innovation & Leadership is responsible for scheduling.

Sustainability Focused - SDG 12: Responsible Consumption and Production

ENVS 168A - Climate Action and Leadership I

6 unit(s)

Scientific and social scientific approaches to the process and effects of global climate change: Climate changes in the Earth's past, interactions between climate and life, anthropogenic climate change, socioeconomic contexts of environmental effects, cultural influences on climate change mitigation strategies.

Satisfies SJSU Studies S+V: Self, Society & Equality in the U.S. + Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with COMM 168A / METR 168A. Communication Studies is responsible for scheduling.
Sustainability Focused - SDG 13: Climate Action

ENVS 168B - Climate Action and Leadership II

3 unit(s)

Scientific and social scientific approaches to the process and effects of global climate change: Climate changes in the Earth's past, interactions between climate and life, anthropogenic climate change, socioeconomic contexts of environmental effects, cultural influences on climate change mitigation strategies.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of COMM 168A / ENVS 168A / METR 168A with a C- or better. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with COMM 168B / METR 168B. Communication Studies is responsible for scheduling.
Sustainability Focused - SDG 13: Climate Action

ENVS 169 - Introduction to Social Media in Planning

1-4 unit(s)

An introduction to social media tools and their use in urban planning, with a particular emphasis on public participation.

Prerequisite(s): Upper Division standing.

Grading: Letter Graded

Cross-listed with URBP 169. Urban and Regional Planning is responsible for scheduling.
Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 173 - Forest Ecology and Conservation

4 unit(s)

A field based course designed to provide students with the conceptual framework and practical tools necessary for understanding the ecology and conservation of local forest ecosystems. Topics covered include forest restoration, succession, wildlife, diversity, natural and human disturbance, and the history of forest management.

Lecture 3 hours/Lab 2 hours.

Prerequisite(s): ENVS 1, ENVS 10, or upper division standing.

Grading: Letter Graded.

Sustainability Focused - SDG 15: Life on Land

ENVS 175 - Wildfire Policy and Management

3 unit(s)

Introduction to policies, programs, and approaches to wildfire risk management across international, US federal, state, and local contexts. Students learn about and employ policy tools used to manage wildfire risk to people and to natural resources across public and private lands during the three phases of wildfire management: (1) prevention/preparation, (2) suppression/evacuation, and (3) recovery. Explore the factors increasing wildfire risk including land use decisions and climate change impacts.

Prerequisite(s): Completion of GE Areas A2 and D, or instructor consent.

Grading: Letter Graded

ENVS 178 - Intro to Regional Transport Planning

4 unit(s)

Principles and concepts relevant to transportation planning and policy at the regional level, such as historical and current regional transportation planning processes, the relationship between regional travel demand and transportation infrastructure, and travel demand modeling practices.

Prerequisite(s): Upper division standing

Grading: Letter Graded

Cross-listed with URBP 178. Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

ENVS 179A - Fundamentals of GIS for Urban Planning

4 unit(s)

Exploration of Geographic Information Systems (GIS) area analysis techniques for spatial information management in local government: planning support systems, needs analysis, envisioning neighborhoods utilizing multiple maps, charts, photos and the Internet. Course may be repeated for credit when topic changes.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 179A. Urban and Regional Planning is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

ENVS 181 - Environmental Resource Center

1-3 unit(s)

Supervised projects that support the Environmental Resource Center, a source of sustainability information and activities for the campus and community; projects help students take personal action toward achieving a sustainable lifestyle.

Misc/Lab: Activity 2-6 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): ENVS 1 or instructor consent.

Grading: Credit/No Credit

Sustainability Focused - SDG 4: Quality Education

ENVS 185 - Environmental Impact Analysis

4 unit(s)

Current environmental impact reports subjected to critical review; determination of alternative procedures and mitigating opportunities; extensive field analysis and practice.

Misc/Lab: Lecture 3 hours/lab 2 hours.

Prerequisite(s): ENVS 1, ENVS 124 or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 185. Environmental Studies is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 187 - Environmental Restoration

4 unit(s)

Interdisciplinary art and science of restoring destroyed or degraded habitats. Emphasis on the interplay of ecological principles, policy, public involvement and economics in the planning, implementation and monitoring of restoration plans. Field work and independent research required.

Misc/Lab: Lecture 3 hours/lab 2 hours.

Prerequisite(s): ENVS 1, GE B2 course and any 100W, or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

ENVS 189 - Coastal Field Studies

4 unit(s)

Introduction to coastal processes, resources, policy, and conservation. Course emphasizes environmental issues, human impact, and protection efforts focusing on adapting to coastal change. Students conduct research and participate in local field trips along the California coast.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): ENVS 1.

Grading: Letter Graded

Sustainability Focused - SDG 14: Life Below Water

ENVS 190 - Advanced Environmental Impact Assessment

4 unit(s)

Advanced work in the field of environmental impact assessment. Analysis of EIA documents for regulatory adequacy, consistency with local planning documents and technical accuracy.

Misc/Lab: Lecture 3 hours/lab 2 hours.

Prerequisite(s): ENVS 185 or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 190. Environmental Studies is responsible for scheduling.
Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 191 - Advanced Environmental Restoration

4 unit(s)

Advanced restoration research and applications. Emphasis on independent literature research and field data collection. Participation in on-going restoration project. Fieldwork and grasp of restoration principles required.

Misc/Lab: Lecture 3 hours/lab 2 hours.

Prerequisite(s): ENVS 187.

Grading: Letter Graded

Note(s): Offered only occasionally.

Sustainability Focused - SDG 15: Life on Land

ENVS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ENVS 193 - Supervised Projects and Research

1-15 unit(s)

Projects and/or research to build practical environmental skills. Work on or off campus on projects with direct social value.

Course may be repeated for credit for up to 15 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 194 - Environmental Internship

1-9 unit(s)

Service in a local, city, county, state, or federal environmental/sustainability agency or school; or in environmental/sustainability industry; or with a worthwhile environmental education or protection organization or center.

Prerequisite(s): Senior standing in Environmental Studies or instructor consent.

Grading: Credit/No Credit

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 195 - Instructor Assistant in Environmental Studies

1-3 unit(s)

Experience as a tutor assistant in classroom demonstrations, field techniques and discussion. May be repeated for a 4 unit maximum, but not for same course or instructor.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Senior standing, ENGL 1A, instructor consent and appropriate academic background.

Grading: Credit/No Credit

Sustainability Focused - SDG 4: Quality Education

ENVS 198 - Senior Seminar

4 unit(s)

Culmination of interdisciplinary curriculum in environmental studies through integration and critical assessment of the field. Primary research, fieldwork, and project presentation supports transition from undergraduate experience to full professionalism.

Prerequisite(s): Filed for graduation, completion of Environmental Studies core, including ENVS 100W.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

ENVS 199 - Senior Thesis

3 unit(s)

Thesis demonstrating grasp of environmental subjects and principles, ability to research in depth particular environmental problems and facility at recommending practical solutions.

Prerequisite(s): Senior standing in Environmental Studies, completion of all Environmental Studies core requirements and university 100W writing requirement.

Grading: Credit/No Credit

ENVS 200 - Seminar: Environmental Methods

3 unit(s)

Rigorous analysis of methods used by social, physical and natural scientists in assessing a region's natural resources and quality of environment. Environmental application of such techniques as field methods, maps, social surveys and project evaluation. Critique of individual research proposals.

Prerequisite(s): ENVS 297 and consent of graduate advisor.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

ENVS 210 - Current Topics in Environmental Studies

1-3 unit(s)

An investigation of current research topics in the field of Environmental Studies. Lectures by faculty, visiting scholars, and Master's student candidates are accompanied by class discussions and analysis of academic journal articles.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Graduate Student Standing or instructor consent

Grading: Credit/No Credit

Sustainability Focused - SDG 4: Quality Education

ENVS 227 - Advanced Community Based Participatory Research

3 unit(s)

Integrates interdisciplinary theory and practice in developing a situated understanding of community-based participatory research (CBPR) toward redressing environmental inequities. Course explores the epistemological, environmental and movement-building imperatives for creating effective and responsible community-researcher partnerships for social, health and environmental justice.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENVS 250 - Seminar: Environmental Thought and Philosophy

3 unit(s)

An in-depth critical analysis of significant works in the field of environmental studies. Topics covered include preservation versus conservation, biocentrism, environmental justice, eco-feminism, deep ecology, and environmental activism. Individual student research is presented with oral and written reports.

Prerequisite(s): Graduate standing in Environmental Studies or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

ENVS 270 - Field Studies in Water Resource Management

4 unit(s)

An intensive field investigation of water resource agencies and projects to acquaint resource managers, environmental quality specialists and other interested students with projects and philosophies unique to particular geographic areas.

Misc/Lab: Lecture 4 hours/lab 2 hours.

Prerequisite(s): Upper division standing and ENVS 128 or ENVS 129, or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 6: Clean Water and Sanitation

ENVS 285 - Graduate Internship

3-9 unit(s)

Advanced service in a local, city, county, state agency, federal agency or environmental industry.

Prerequisite(s): Graduate standing in Environmental Studies or instructor consent.

Grading: Credit/No Credit

Sustainability Focused - SDG 17: Partnerships for the Goals

ENVS 291 - Advanced Topics in Environmental Restoration

4 unit(s)

High-level restoration research and applications for advanced students. Emphasis on independent literature research and field data collection/analysis. Participation in ongoing restoration project and/or thesis research. Fieldwork and grasp of restoration principles required. Repeatable for up to 8 units of credit

Misc/Lab: Lecture 4 hours/Activity 2 hours.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing and ENVS 187 or equivalent, or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

ENVS 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ENVS 295 - Graduate Teaching Assistant

3 unit(s)

Teaching experience in environmental studies at the college level. Does not meet requirements for California Certification in Elementary or Secondary Education. May be repeated for maximum of 6 units, but not for same course or instructor.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Graduate standing in Environmental Studies or instructor consent.

Grading: Credit/No Credit

Sustainability Focused - SDG 4: Quality Education

ENVS 297 - Research and Proposal Development

3 unit(s)

Students develop their thesis topic through extensive literature research. The product will be a draft thesis proposal to be circulated among potential committee members.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Repeatable for credit.

Prerequisite(s): Graduate Standing in Environmental Studies or consent of instructor.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Focused - SDG 4: Quality Education

ENVS 298 - Special Study

1-4 unit(s)

Advanced individual research and projects.

Prerequisite(s): Graduate standing in Environmental Studies or instructor consent.

Grading: Mandatory Credit/No Credit/RP

ENVS 299 - Master's Thesis

1-6 unit(s)

Masters thesis research.

Repeatable for credit.

Prerequisite(s): Graduate standing in Environmental Studies or instructor consent.

Grading: Credit/No Credit/RP.

Sustainability Focused - SDG 4: Quality Education

ENVS 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on dissertation, thesis, or project or in preparation for comprehensive exams beyond the minimum required units for cases in which final deliverables are still in progress and all other degree requirements except the culminating experience have been fulfilled.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Foreign Language Education

FLED 184Y - Student Teaching II - Classroom Teaching

4 unit(s)

Minimum 80-120 class periods of classroom teaching or field teaching in appropriate single subjects, grades K-12 and related teaching activities and seminar.

Prerequisite(s): Joint approval of major and Education departments.

Grading: Credit/No Credit

FLED 184Z - Student Teaching III - Classroom Teaching

4 unit(s)

See FLED 184Y for course description.

Grading: Credit/No Credit

Note(s): May be in different subject/school and will be at a different grade level.

FLED 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

FLED 285 - Student Teaching Seminar In Foreign Language Education

1 unit(s)

As a companion course to the Phase II/III student teaching experience in the Single Subject Credential program in Chinese, French or Spanish at San Jose State University, the seminar provides a framework and support for the Performance Assessment for California Teachers (PACT).

Course may be repeated for credit for up to 4 units.

Prerequisite(s): EDSC 184X.

Corequisite(s): FLED 184Y/FLED 184Z.

Grading: Credit/No Credit

FLED 380 - Teaching Foreign Languages

3 unit(s)

Theory and practice.

Prerequisite(s): College approval and competence in at least one foreign language.

Grading: Letter Graded

Foreign Languages

FORL 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

FORL 96A - Elementary Assyrian Culture and Language

3 unit(s)

This course is designed for heritage or non-native speakers of the Assyrian language with limited speaking fluency and no writing or reading skills. Starting with the alphabet, students will learn reading and writing skills, and acquire elementary oral communication. (Special Session only).

Grading: Letter Graded

FORL 100W - Writing Workshop

3 unit(s)

Advanced composition with practice in research and development of writing skills using a variety of literary and cultural concepts.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

FORL 122 - Topics in Comparative World Literature

4 unit(s)

An exemplary theme as treated in various literatures from different national sites, e.g., war, love, freedom, colonialism, environmental disaster.

Grading: Letter Graded

Cross-listed with COLT 122 / ENGL 122 / HUM 122. English and Comparative Literature is responsible for scheduling.

FORL 126 - Holocaust Literature

3 unit(s)

Survey of literature written by survivors or witnesses of the Holocaust, the destruction of European Jewry during World War II, focusing upon diaries, memoirs, fiction, and occasionally poetry and drama. Writers may include Elie Wiesel, Primo Levi, Anne Frank, Charlotte Delbo.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENGL 126 / HUM 126 / JWSS 126. English and Comparative Literature is responsible for scheduling.

FORL 150 - Learning a World Language

4 unit(s)

Introduction to the field of second language acquisition with special attention to adult second language learning. Service learning required. Taught in English.

Grading: Letter Graded

FORL 180 - Individual Studies in World Languages and Literatures

3-6 unit(s)

FORL 180 is designed for individual studies in languages taught at SJSU that are not part of a major or minor program, such as Arabic, Hebrew, Persian/Farsi or Vietnamese.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Upper division standing, instructor approval

Grading: Mandatory Credit/No Credit/RP

FORL 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

FORL 200W - Graduate Research & Writing

4 unit(s)

Techniques of writing research papers and theses. Includes bibliographical sources and style sheets. Comprehensive study of literary genres and techniques for critique of these genres. Emphasis on organization of materials.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course can be taken to satisfy GWAR requirement once. Repeatable for degree program credit four times for up to 16 units.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

FORL 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

FORL 298 - Individual Studies in World Languages and Literatures

1-6 unit(s)

Directed study (research projects) in specified fields not covered by offered courses. Student-initiated in-depth study of a mutually agreeable topic conducted under faculty guidance.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor approval, graduate standing.

Grading: Mandatory Credit/No Credit/RP

Forensic Science

FS 11 - Survey of Forensic Science

3 unit(s)

This survey course introduces students to the profession of forensic science. Topics include the field's history and sub-disciplines, the CSI Effect, the application of the scientific method to physical evidence analysis. Virtual labs may be used to augment readings.

Grading: Letter Graded

FS 12 - Introduction to Digital Evidence Investigations

3 unit(s)

Introduction to the field of digital evidence investigation in the United States. Policies, procedures, and best practices for examinations, including technical base knowledge, laws and jurisdiction, identification and evaluation of computer and network artifacts, triage analysis, case-relevant event timelines.

Grading: Letter Graded

FS 57 - Biological Criminalistics

3 unit(s)

Working on a mock case, students gain experience in locating, identifying and collecting biological traces such as blood, semen and saliva. Students learn how to evaluate biological evidence within varied case contexts, culminating in interpretation of the biological test results to aid in addressing activity level propositions for the court. Students also learn the theory of bloodstain pattern analysis and apply this theory within the crime scene simulation suite.

Lecture 2 hours/activity 2 hours.

Prerequisite(s): FS 11 AND any general biology course such as BIOL 30 or BIOL 31 or by instructor consent.

Grading: Letter Graded

FS 100W - Forensic Science Writing Workshop

3 unit(s)

Development of advanced communication skills, both written and oral, with emphasis on forensic laboratory and crime scene report writing and court testimony. A scholarly paper, written in APA format and informed by research, is also required.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): FS 11 or JS 10; A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

FS 101 - Expert Witness Testimony

3 unit(s)

Prepares students for careers requiring courtroom testimony. Students learn the process of scientific testimony in criminal and civil cases and investigate key court rulings, admissibility standards and challenges, how to testify, and ethical considerations. Through a culminating mock trial, students apply course material.

Prerequisite(s): JS 100W/FS 100W, FS 11, or instructor consent

Grading: Letter Graded

FS 106 - Forensic Entomology

3 unit(s)

Examines the science and methodology used to collect, analyze, and present information regarding insects and other arthropods that are important in legal investigations.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 30 and BIOL 31 (with a grade of "C-" or better in each), or instructor consent. Must be a declared Biology or Forensic Science Major (all).

Grading: Letter Graded

Cross-listed with ENT 106. Biological Sciences is responsible for scheduling.

FS 130 - Digital Forensic Analysis

3 unit(s)

Application of appropriate digital forensics analysis procedures for Windows systems and network forensic investigations. Provides best practices foundation with hands-on laboratory experiences, completing full digital forensics examinations from identification, to acquisition, to processing, to analysis, to final reporting.

Lecture 2 hours/lab 2 hours.

Prerequisite(s): Any 100W and FS 12. Strongly recommend FS 100W or JS 100W; FS 11 or JS 10; and CS 147.

Grading: Letter Graded

FS 131 - Digital Forensic Applications

3 unit(s)

Application of appropriate digital forensics investigation practices and procedures through theory and practice with lab exercises. Emphasis on directed learning with case studies and experience completing full digital forensics examinations from acquisition, to analysis, to final reporting.

Lecture 2 hours/Lab 2 hours.

Prerequisite(s): FS 130.

Grading: Letter Graded.

FS 160 - Special Topics in Forensic Science

1-5 unit(s)

Range of topics in Forensic Science which will vary by semester. Topics may include Blood Spatter Analysis, Microscopy and Trace Evidence, Forensic Art, Facial Reconstruction, and others.

Repeatable for up to 9 units credit when content changes.

Prerequisite(s): JS 10 or FS 11 or instructor permission. Justice Studies or Forensic Science major; Forensic Studies minor.

Grading: Letter Graded

FS 161 - Crime Scene Investigation

3 unit(s)

Fundamental theories of physical evidence practically applied and the legal considerations involved in its recognition, collection preservation and presentation in court are covered. Topics include securing and recording the crime scene, collecting evidence, maintaining the chain of custody and reconstruction.

Lecture 2 hours/activity 2 hours

Prerequisite(s): FS 11, JS or FS Major/Minor, Upper Division Standing.

Grading: Letter Graded.

FS 162 - Forensic Science Applications

3 unit(s)

Scientific analysis and interpretation of physical evidence using identification and comparison techniques. Practical lab exercises in human identification, questioned documents, bite marks, trace evidence, presumptive testing, and glass analysis. Additional topics include court testimony, quality assurance, and ethics.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): FS 11, JS or FS Major/Minor, Upper Division Standing.

Grading: Letter Graded.

FS 163 - Fingerprint Science

3 unit(s)

History and use of fingerprints in criminal identification. Topics include the scientific basis for fingerprint identification, anatomy of friction ridge skin, pattern classification, minutiae marking, the Henry System, AFIS and CAL-ID, court presentation of fingerprint evidence, and causes and sources of error.

Lecture 2 hours/lab 2 hours.

Prerequisite(s): Upper-Division Standing; and FS 11 (Forensic Science majors/minors) or JS 10 (Justice Studies majors/minors).

Grading: Letter Graded

Note(s): The course is recommended for anyone who plans to pursue a career in investigations or latent fingerprint identification.

FS 164 - Crime Scene and Evidence Photography

3 unit(s)

Practical use of photography in documenting crime scenes and evidence. Topics will include 35mm camera operation, lenses, focus, exposure, depth of field, lighting, composition, flash, injury documentation, digital cameras and video, and court presentation of photographic evidence.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): FS 11, JS or FS Major/Minor, Upper Division Standing. JS Students may substitute JS

10 for FS 11.

Grading: Letter Graded

FS 166 - Forensic Chemistry

3 unit(s)

An exploration of scientific concepts, methods, practices, instrumentation, interpretation, statistics and court issues of chemistry as applied in forensic science including special topics: drug analysis, toxicology, arson and trace analysis emphasizing the instrumentation that allows chemical examination of evidence.

Prerequisite(s): CHEM 1A and CHEM 1B OR CHEM 30A and CHEM 30B; and FS 11.

Grading: Letter Graded.

FS 167 - Forensic Molecular Biology

4 unit(s)

History, scientific concepts, methods, practices, instrumentation, interpretation, statistics and court issues of forensic DNA analysis via lectures, hands-on activities/laboratories, and videos. Collection, documentation and preservation of biological evidence, bioethics, QA, validation, admissibility and training will also be covered.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Prerequisite(s): FS 57, BIOL 31, CHEM 1A, and CHEM 1B : all with C or better grade.

Grading: Letter Graded

FS 169 - FS Senior Seminar: Studies in Contemporary FS Issues

3 unit(s)

Identification, discussion and analysis of selected problems in forensic science. A major term paper, presentation on a selected topic and participation on written as well as in-class assignments and activities are required.

Prerequisite(s): Justice Studies Majors: Senior standing, JS/FS 100W and JS 114 or instructor consent, graduation application filed and you must have already filled out and have a signed major form. Note- JS 114 is waived as a prerequisite for Forensic Science majors. For Forensic Science Majors: Senior standing, JS?FS 100W, FS 161, FS 162, BIOL 30, or by instructor consent; graduation application filed and you must have already filled out and have a signed major form.

Grading: Letter Graded.

Note(s): Department consent required to obtain an add code - you must have applied for graduation, your Major Advisor must have already submitted a graduation check form AND you have applied via online Google form: <https://www.sjsu.edu/justicestudies/current-students/internship-and-seminar-add-codes.php>.

FS 170 - Forensic Science in Human Rights Investigations

3 unit(s)

Role of forensic science in pursuing justice for human rights victims, using documentation, collection, processing and interpretation of evidence in violations of human rights and international humanitarian law and interfaces of law, society, culture, politics, history, ethics and forensic science.

Prerequisite(s): JS 10, JS 25, FS 11, or instructor consent.

Grading: Letter Graded

FS 171 - Forensic Criminology

3 unit(s)

Contextualizes mental processes, intentions, motivations, and reactions of criminals, police, victims, and the courts systems. Critically examines the psychology of deviant behavior, the evidentiary processes in justice systems, and the validity and reliability that come with testimony and criminal defenses.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

FS 172 - Practical Forensic Microscopy

3 unit(s)

The foundations of forensic microscopy techniques, with an emphasis on their practical applications in the laboratory and in criminal investigations.

Lecture 2 hours / Activity 2 hours.

Prerequisite(s): FS 11.

Grading: Letter Graded.

FS 173 - Death Scene Investigation

3 unit(s)

Fundamental theories, principles, and techniques of medicolegal death investigation. Topics include Coroner/Medical Examiner laws of California, recording a death scene, collecting evidence from the scene and the body, autopsy, determining cause and manner of death, working with law enforcement and other government entities, maintaining chain of custody, and preparing written reports. Case studies are used to illustrate methods of investigation and special problems encountered.

Prerequisite(s): FS 11 (FS majors and minors) or JS 10 (JS majors and minors), and upper division standing.

Grading: Letter Graded

FS 174 - Forensic Taphonomy and the Depositional Environment

3 unit(s)

Forensic taphonomy is a subdiscipline of forensic anthropology. It is the postmortem study of the processes that affect the human body from death to recovery and focuses on how the environment impacts the body's rate of decomposition, as well as how the body itself alters the surrounding environment. Course is comprised of a lecture component and an activity component in which students examine and apply the science and methodologies used in this field.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): FS 11 and FS 162 or by instructor consent.

Grading: Letter Graded.

High Impact Practice: Research

FS 175 - Firearm and Toolmark Evidence Analysis

3 unit(s)

Surveys the methods employed in the forensic examination of firearms, ammunition, and other types of toolmarks, as well as the history of firearms and ammunition, their different types, and the evidentiary value of firearm and toolmark evidence as it relates to criminal investigations. Lectures and lab exercises familiarize students with the different types of testing and equipment used to examine this type of evidence.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): FS 11

Grading: Letter Graded

FS 176 - Introduction to Fire and Explosion Investigations

3 unit(s)

Introduction to the process of fire scene investigation and specifics of bombing scene examination, including explosives collection and analysis. Topics include conducting an exterior and interior survey, analyzing fire patterns, discriminating the effects of explosions, examining and removing fire debris, reconstructing the area of origin, documenting the scene, constructing investigative notes, processing evidence and maintaining chain of custody, processing victims and fatalities, and preparing a fire investigation report.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): FS 11; CHEM 1A and CHEM 1B OR CHEM 30A and CHEM 30B.

Grading: Letter Graded.

FS 177 - Forensic Genotyping Technologies

4 unit(s)

Recent advancements in forensic DNA technologies and their implementation into operational casework analysis. Topics include: novel genetic and epigenetic markers of forensic interest, massively parallel sequencing and high-density microarrays; population genetics and genetics of complex human traits; analysis and interpretation of bioinformatic data; applications of forensic molecular phenotyping and forensic genealogy, probative value of forensic intelligence, ethical and legal considerations related to implementation of the advanced genotyping technologies.

Lecture 3 hours/Lab 3 hours.

Prerequisite(s): BIOL 115, FS 11, and FS 167, or by instructor's approval.

Grading: Letter Graded

French

FREN 1A - Elementary French

4 unit(s)

Basic structure of the language in the context of culture.

Satisfies C2: Humanities.

Grading: Letter Graded

FREN 1B - Elementary French

4 unit(s)

Basic structure of the language in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): FREN 1A (or equivalent).

Grading: Letter Graded

FREN 25A - Intermediate French: Reading

4 unit(s)

Intensive training in reading authentic texts of a broad variety of genres in French to increase the students' proficiency from ACTFL Low Intermediate to Mid and High Intermediate levels.

Satisfies C2: Humanities.

Prerequisite(s): One Year of college-level French (or equivalent or SJSU placement exam).

Grading: Letter Graded

FREN 25B - Intermediate French: Writing

4 unit(s)

Intensive practice in French expository writing to increase the students' written proficiency from ACTFL Low Intermediate to Mid and High levels. Review of major grammatical rules, vocabulary development and introduction to translation.

Satisfies C2: Humanities.

Grading: Letter Graded

FREN 25C - Intermediate French: Oral Communication

4 unit(s)

Practice in pronunciation, listening and speaking in formal and informal situations. Introduction to Francophone cultures and linguistic variations. May be repeated twice for credit.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Two semesters of college French (or equivalent).

Grading: Letter Graded

FREN 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

FREN 101A - Advanced French: Reading and Writing

4 unit(s)

Increase proficiency in reading/writing from intermediate high to advanced. Gain competence in reading abstract and linguistically complex materials (fiction, non fiction and creative). Improve ability to express self in formal and informal writing on practical, social or professional topics.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Two years of college French or equivalent.

Grading: Letter Graded

FREN 101B - Advanced French: Written Communication

4 unit(s)

Increase proficiency in reading/writing from advanced to advanced plus level. Gain competence in reading materials that are abstract and linguistically complex (literary genres). Improve ability to write about topics with precision and describe, narrate and support point of view.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Two years of college French or equivalent.

Grading: Letter Graded

FREN 101C - Advanced French: Oral Communication

4 unit(s)

Ability to participate effectively in most formal and informal exchanges on practical, social, professional and abstract topics. Express and support opinions and hypothesize using native-like discourse strategies.

Course may be repeated for credit up to 8 units, but only 4 units apply to major or minor.

Prerequisite(s): Two years of college French or equivalent.

Grading: Letter Graded

FREN 102A - French Culture

4 unit(s)

History, physical and cultural geography, fine/folk art and daily life of France up to the time of the Revolution.

Prerequisite(s): 20 units of college French (or equivalent).

Grading: Letter Graded

FREN 102B - Francophone Cultures: Through Literature and Cinema

3 unit(s)

History, physical and cultural geography, fine/folk art and daily life of France and French-speaking countries.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Online - taught in English.

FREN 102C - French Culture

4 unit(s)

French culture from the Revolution to the 21st Century.

Prerequisite(s): 20 units of college French (or equivalent).

Grading: Letter Graded

FREN 105 - Advanced Grammar: Phonetic Analysis

4 unit(s)

Contrastive analysis of French and English sound systems and their practical application to pronunciation. Intensive conversation and reading of poetry and plays. Language laboratory.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Four semesters of college French (or equivalent).

Grading: Letter Graded

FREN 110 - Advanced Grammar: Grammatical Analysis

4 unit(s)

Structural analysis. Comparison of morphological and syntactical patterns of English and French. Course is repeatable for a total of 6 units.

Prerequisite(s): FREN 101B (or equivalent).

Grading: Letter Graded

FREN 120A - French Literature from the Middle Ages to 1600

4 unit(s)

Course may be repeated for credit for up to 8 units.

Prerequisite(s): FREN 101B or instructor consent.

Grading: Letter Graded

FREN 120B - French Literature of the Seventeenth through the Eighteenth Centuries

4 unit(s)

May be repeated for credit when content changes.

Prerequisite(s): FREN 101B (or equivalent).

Grading: Letter Graded

FREN 132 - Special Topics in French for Careers

4 unit(s)

Provides a focus on the use of the French language for various professions, and examines in depth selected topics in regard to French in the professional world. Repeatable for up to 8 units when topic changes.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): 4 semesters of French or instructor consent.

Grading: Letter Graded

FREN 140B - French Literature 20th-21st Centuries

4 unit(s)

May be repeated for credit when content changes.

Course may be repeated for credit up to 8 units.

Prerequisite(s): FREN 101B (or equivalent).

Grading: Letter Graded

FREN 160 - Masters of French Literature

4 unit(s)

Significant periods or genres. May be repeated for credit when content changes.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Two courses from 120, 140 series (or equivalent).

Grading: Letter Graded

FREN 170 - Translation and Comparative Stylistics

4 unit(s)

Theory and practice of translation for various purposes including literary, scientific, and professional ones. Comparative stylistics of English and French.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): FREN 110 (or equivalent).

Grading: Letter Graded

FREN 180 - Individual Studies in French

1-3 unit(s)

Individual work by arrangement.

Prerequisite(s): Upper division standing in French (or equivalent preparation with grade of "B") and instructor consent.

Grading: Credit/No Credit

FREN 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

FREN 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Geographic Information Science

GISC 205 - Spatial Data Literacy and Ethics

4 unit(s)

Explore the ethical and social impacts of geospatial technologies, tracing roots in moral philosophy and professional ethics. Analyze complex case studies, critique legal and policy issues, and evaluate organizational ethics in the field. Develop a framework for ethical digital practices and conduct a research project on ethical issues. Course activities include readings, case studies, presentations, discussions, and a final research project.

Satisfies GWAR: Graduation Writing Assessment Requirement

Grading: Letter Graded.

Note(s): This course satisfies graduate-level GWAR in this master's program.

GISC 210 - Spatial Data Science Through Open-Source GIS Technologies

4 unit(s)

Alternative open source tools for practicing GIS besides licensed and conventional tools for hosting, data development, processing, and sharing, e.g., GITHUB , Quantum GIS (QGIS), GeoServer and PostGIS.

Lecture 2 hours/Lab 6 hours.

Prerequisite(s): GISC 171, GISC 182 or MS GISc coordinator consent.

Grading: Letter Graded.

GISC 220 - Spatial Statistics, Analysis, & Modeling

4 unit(s)

Course covers skills for statistics, analysis of patterns in point, area, and field data, detecting non-randomness, measuring spatial autocorrelation, etc.

Lecture 2 hours/Activity 4 hours.

Prerequisite(s): GISC 170 or MS GISc director's consent.

Grading: Letter Graded.

GISC 298A - Master Report 1: Final Project Research Design

3 unit(s)

An 'asynchronous' course with no scheduled class meetings. Students will complete course assignments and meet deadlines as listed on the course Canvas page and in syllabus. Students must take it upon themselves to submit assignments and be in regular communication with their assigned advisor throughout the semester via phone, email, and Zoom.

Grading: Credit/No Credit/RP.

Geography

GEOG 1 - Physical Geography

3 unit(s)

Atmospheric, biologic and geologic processes that create the natural environments of the world. Discovery of local, regional and global patterns in the location and distribution of environmental phenomena, and the human modifications of natural environments.

Satisfies B1: Physical Science.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

GEOG 3 - Spatial Data Literacy

1 unit(s)

Explore the data used in geospatial technology, including Geographic Information Systems (GIS), Global Positioning Systems (GPS), cartography, remote sensing, and spatial analysis. Learn to store and manage data, create databases, and document metadata.

Grading: Letter graded.

GEOG 4 - Geospatial Ethics & Privacy

1 unit(s)

Introduces future professionals to GIS associations and codes of ethics and uses scenarios and case studies to recognize, analyze, and address legal and ethical and privacy issues occurring in the geospatial field.

Grading: Letter graded.

GEOG 10 - Cultural Geography

3 unit(s)

The human population studied through the perspective of cultural groups, their institutions and geographic distributions, how different people occupy, use, and modify their environment, and the interaction of individuals from one group with those of another.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Sustainability Focused

GEOG 12 - World Regional Geography

3 unit(s)

Comparative geography of our world: regions and countries, natural environments and resources, settlements and land use, cultural diversity, economic and political patterns.

Satisfies D: Social Sciences.

Grading: Letter Graded.

GEOG 70 - Introduction to Geographic Information Systems

4 unit(s)

Foundations of the mapping sciences and geographic information systems. Basics of earth measurement, location and mapping. Thematic map display and analysis. Application through a variety of laboratory experiences.

Lecture 3 hours/lab 3 hours.

Grading: Letter Graded

GEOG 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

GEOG 100W - Writing Workshop

3 unit(s)

Development of skills required for geographical research and writing.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

Cross-listed with GLST 100W. Urban and Regional Planning is responsible for scheduling.

GEOG 103 - Colloquium

1 unit(s)

Presentations of original research by visiting scholars, faculty, and graduate students.

Grading: Credit/No Credit.

GEOG 105 - Urban Geography

3 unit(s)

Spatial patterns in the urban environment: City function and morphology; population patterns and functional zonation; analysis of recent changes.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

GEOG 107 - Mapping the World

3 unit(s)

Scientific understanding of the physical systems and processes of Earth as explored through data and mapping, satellite and aerial imagery, and an introduction to spatial analysis. In this survey of diverse global environments students will create interactive web applications and story maps using ArcGIS Online to visually communicate the interrelationships between humans and their environment.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education, and upper division standing are prerequisites to all SJSU studies course. Completion of, or co-registration in, 100W is strongly recommended

Grading: Letter Graded

GEOG 110 - Urbanization in the Global South

3 unit(s)

This course explores issues and debates that relate to urbanization in the developing world. Students will gain a general understanding of the concept of urbanization in the developing world, and what are some of the issues, challenges, and policy responses found in these urban environments.

Prerequisite(s): Completion of core GE. Upper division standing

Pre/Corequisite(s): 100W

Grading: Letter Graded.

Cross-listed with URBP 110. Geography is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

GEOG 112 - Nations, Cultures & Globalization

3 unit(s)

In a world with rapidly diminishing resources new conflicts are emerging based on factors such as ethnicity, economic opportunity, religion, and nationalism. Explore global circumstances leading to conflict.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

GEOG 113 - Global Cities

3 unit(s)

This course introduces various aspects of global cities, including debates over global cities, urban culture, new urban landscapes, and class/socio-economic disparity. The class includes case studies regarding global cities throughout the world that aim to explore the diversity and/or similarities of the global city formation process.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

GEOG 115 - Global Development

3 unit(s)

Exploration of the contemporary global economy using a variety of analytical approaches developed by

geographers. Provides geographic perspective on world economy and environmental issues within a spatial context.

Prerequisite(s): Upper division standing. GEOG 101 recommended.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

GEOG 120 - Food Supply and Agricultural Systems

3 unit(s)

Geography of world agriculture and nutritional needs of a growing world population. Comparison of traditional and modern agricultural systems in their use of resources and technologies. Effectiveness in meeting demands and sustainability.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 2: Zero Hunger

GEOG 121 - Population and Global Change

3 unit(s)

Impact of population changes on countries, regions, and their environments. Demographic comparisons of developed and developing societies from perspectives of land use, economics and politics.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ENVS 121. Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 15: Life on Land

GEOG 124 - Special Topics in Geography

3 unit(s)

Special Topics in Geography. Topics vary; see class schedule for content.

Repeatable for credit when topic changes.

Prerequisite(s): GEOG 1 or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

GEOG 130 - Natural Resources

3 unit(s)

Geography of economic, environmental, political and technological factors that define natural resources and affect their availability and use. Focus on water, food-producing and energy resources.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

GEOG 135 - Research Methods in Geography

3 unit(s)

Development of skills required for quantitative and qualitative geographical research addressing diverse geographic problems

Prerequisite(s): ENGL 2.

Grading: Letter Graded

GEOG 140 - The United States

3 unit(s)

Geography of the U.S. emphasizing the continuing changes of America's places and regions. Themes include environmental, culture, economic, and social geographies at community, regional and national scales.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

GEOG 160 - East and South Asia

3 unit(s)

Geography of Eastern, Southeastern, and Southern Asia. Themes include environmental, historical, political, and economic geographies at the scales of the region, its countries, and selected cities. Particular emphasis is given to comparing and analyzing the variable rates of economic progress across the region.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 160. Geology is responsible for scheduling.

Sustainability Related - SDG 17: Partnerships for the Goals

GEOG 165 - National Parks

3 unit(s)

An exploration of the history, philosophy, and science of park and wilderness preservation. Includes site visits to selected parks and wilderness areas.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 165. Urban and Regional Planning is responsible for scheduling.

GEOG 168 - Sub-Saharan Africa

3 unit(s)

Regional study of environments, as well as cultural, economic and political geography of Africa south of the Sahara. Special attention given to geographic factors in the progress of less developed countries.

Grading: Letter Graded

GEOG 171 - Advanced Geographic Information Systems

4 unit(s)

Maps as tools of geographic expression and research. Introduction to spatial analysis through geographic information systems. Data collection and description; measuring absolute and relative location, patterns, interaction and association.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): GEOG 70 or instructor consent.

Grading: Letter Graded

GEOG 172 - Cartography and Data Visualization

3 unit(s)

Techniques of compilation, design, construction and production. Lab projects applying computer graphics and geographic information systems to the effective presentation of geographic themes and information.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): GEOG 70 or instructor consent.

Grading: Letter Graded

GEOG 173 - Drones and Spatial Data Collection

3 unit(s)

Methods of capturing data, acquiring, and importing existing spatial data into geographic information systems, deriving spatial information from remotely sensed data, and storing spatial data.

Prerequisite(s): GEOG 70 and GEOG 172, or instructor consent.

Grading: Letter Graded

GEOG 175 - Geographic Information Systems Project Development

3 unit(s)

Creation of geographic information system databases and application software to solve specific problems in such areas as resource and facilities management, demographic analysis and planning.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): GEOG 70 or instructor consent.

Grading: Letter Graded

GEOG 178 - Participatory GIS

3 unit(s)

Exploration of the theoretical foundations and methods related to collaborative and participatory use of geographic information systems in the context of regional and local planning for decision-making.

Prerequisite(s): GEOG 70 and GEOG 171; one of the following: GEOG 173, GEOG 175, GEOG 181, or GEOG 182; or instructor consent.

Grading: Letter Graded

GEOG 180 - Individual Studies

1-4 unit(s)

Student-initiated in-depth study of a mutually agreeable topic conducted under faculty guidance.

Prerequisite(s): Supervisor and department chair approval.

Grading: Credit/No Credit

GEOG 181 - Introduction to Remote Sensing

3 unit(s)

Acquisition, interpretation and applications of imagery obtained from both airborne and satellite platforms. Includes visual interpretation and analysis of airphotos and non-photographic images, such as radar and thermal infrared. Remotely-sensed imagery as a source for mapping and geographic information systems.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): GEOG 70 or instructor consent.

Grading: Letter Graded

GEOG 182 - Programming for GIS

3 unit(s)

Introduction to GIS programming languages for customizing applications and streamlining spatial analysis. Topics include laboratory practice with GIS software environments, programming syntax and styles, interface customization, GIS routines and functions, and basic algorithms.

Prerequisite(s): GEOG 70 or instructor consent.

Grading: Letter Graded

GEOG 186 - Field Methods in Geography

3 unit(s)

Introduction to field methods in physical and human geography. Field trips, archival research, and student projects provide practical and applied skills and an informed view of the relationships between people and their environments.

Prerequisite(s): 6 units of upper division geography courses.

Grading: Credit/No Credit

Sustainability Related - SDG 15: Life on Land

GEOG 187 - Research Experience

3 unit(s)

Conduct faculty mentored research where Geographic Information Science is central to methods employed. Evaluation includes a written report, oral presentation, and digital data.

Repeatable for up to 6 units.

Prerequisite(s): 6 units of upper division geography courses.

Grading: Letter Graded

Sustainability Related - SDG 15: Life on Land

GEOG 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

GEOG 195 - Open Source GIS

3 unit(s)

Introduction to the concepts of open source software for both desktop and web applications such as Quantum GIS (QGIS) and OpenStreetMap (OSM).

Prerequisite(s): GEOG 70 and GEOG 171 or instructor consent.

Grading: Letter Graded

GEOG 197 - Internship

1-6 unit(s)

Work/activity with professional application in off-campus establishment or agency. Course requirements and units determined in consultation with faculty advisor and work/activity supervisor.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): 12 units of geography.

Grading: Credit/No Credit

GEOG 199 - Senior Seminar

3 unit(s)

Capstone course examining the history of geographic thought and themes with emphasis on critical assessment of issues affecting current trends; objective of placing undergraduate experience in a professional context.

Prerequisite(s): Senior standing in geography.

Grading: Credit/No Credit

GEOG 239 - Geographic Information Technology

3 unit(s)

Research in application of technology to the design and implementation of computer mapping, remote sensing, and geographic information systems. Includes spatial database design issues, spatial processing algorithms, and cartographic visualization. Research project and paper. May be repeated for credit when offered as a different technology.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

GEOG 279 - Geographic Information Science Applications

3 unit(s)

Research in applications of geographic information science in such areas as urban spatial analysis, environmental analysis, geo-demographic analysis, regional analysis, facilities management, and geographic education. Research project and paper. May be repeated for credit when offered as a different technology.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

GEOG 282 - Advanced Geographic Techniques

3 unit(s)

Specific topics in display and analysis of geographic information. Possible topics include advanced spatial analysis, cartographic representation, user-interface design, internet map server technology. May be repeated for credit when offered as a different technique.

Prerequisite(s): GEOG 70 or instructor consent.

Grading: Letter Graded

GEOG 290 - Seminar in Research Design for Geographic Information Science

3 unit(s)

Introduction to research in geographic information science. Includes definition of research problems, design of research project, identification of appropriate methodologies for acquiring, organizing and analyzing data, and presentation of research results. Research paper.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

GEOG 298 - Special Study

1-4 unit(s)

Advanced individual research and projects unavailable in other department offerings conducted under the supervision of a faculty member.

Prerequisite(s): Approval of supervising faculty member and department chair.

Grading: Mandatory Credit/No Credit/RP

GEOG 298P - Master's Project

1-6 unit(s)

Repeatable for credit.

Prerequisite(s): Approved master's degree candidate.

Grading: Credit/No Credit

GEOG 299 - Master's Thesis

1-6 unit(s)

Repeatable for credit.

Prerequisite(s): Approved master's degree candidate.

Grading: Credit/No Credit/RP.

Geology

GEOL 1 - General Geology

4 unit(s)

Examination of geologic processes and materials, including volcanoes, earthquakes, rock formation, oceans, streams, and plate tectonics and their importance to society.

Misc/Lab: Lecture 3 hours/Lab 3 hours and field trips.

Satisfies B1 + B3: Physical + Lab Science.

Grading: Letter Graded

Sustainability Related

GEOL 2 - Geology for Engineers

3 unit(s)

This course provides a foundational introduction to geology as applied to civil engineering. The course focuses on learning and applying knowledge of geologic processes to civil engineering works, decision making, and evaluating the suitability of areas for urban infrastructure based upon geologic evidence and reasoning. Field trips are required and may include weekends.

Prerequisite(s): Enrolled as Civil Engineering Major or instructor consent.

Grading: Letter Graded

GEOL 3 - Planet Earth

3 unit(s)

Origins and processes of Earth's interconnected physical and chemical systems, including aspects of astronomy, geology, meteorology, and oceanography. Impacts of these systems on humans, and of humans on the systems.

Satisfies B1: Physical Science.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

GEOL 4L - Earth Systems Lab

1 unit(s)

Hands-on investigations, measurements, and analysis of Earth's materials, processes, and hazards. Supplements general lecture courses in Geology.

Lab 3 hours.

Satisfies B3: Laboratory Science.

Grading: Letter Graded.

Sustainability Related

GEOL 5 - Sustainability, Human Development, and the Earth

3 unit(s)

Introductory course examining the role and interaction of the natural world on the physiological, social, and psychological development of human beings within the context of the environmental, social, and academic community system.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Cross-listed with SCED 5. Geology is responsible for scheduling.

Sustainability Related - SDG 15: Life on Land

GEOL 6 - Geology of California

3 unit(s)

California's geology, illustrating physical processes, landscapes, geologic history and resources. California's seismic, volcanic, landslide and flooding hazards, and their impact on society.

Misc/Lab: Lecture 3 hours/field trips.

Satisfies B1: Physical Science.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

GEOL 7 - Earth, Time and Life

4 unit(s)

Earth's geosphere: processes that act on it and materials that comprise it; how rocks and fossils are used to interpret the history of Earth's geosphere, atmosphere, oceans, and life forms.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Satisfies B1 + B3: Physical + Lab Science.

Grading: Letter Graded

GEOL 8 - The Age of the Dinosaurs

3 unit(s)

Scientific overview of the Mesozoic Era, or "age of dinosaurs." The course will focus on the evolution of dinosaurs and other contemporaneous life forms, as well as the mass extinction events that mark the beginning and end of the Mesozoic.

Satisfies B2: Life Science.

Grading: Letter Graded

GEOL 9 - Earth Disasters

4 unit(s)

Exploration of natural disasters related to earth processes, including earthquakes, volcanoes, landslides, tsunamis, flooding, and climate change, and their impacts on society.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Satisfies B1 + B3: Physical + Lab Science.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

GEOL 28 - Geology Outdoors

1 unit(s)

Hands-on introduction to geology in a variety of field settings. Develop your observational skills at several of California's spectacular geologic attractions. Includes one-day field trips, a multi-day field trip, and short written reports.

Pre/Corequisite(s): GEOL 1 and GEOL 7.

Grading: Credit/No Credit

GEOL 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

GEOL 103 - Earth Systems and the Environment

3 unit(s)

Fundamental earth/space science concepts. Emphasis on active learning and guided inquiry. Recommended for students preparing for multiple subject credential.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): PHYS 1 or CHEM 30A, Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused

GEOL 104 - Earth Science Teacher Enhancement

0.5-3 unit(s)

A thematic approach to the study of regionally significant topics, including earthquakes, landslides and volcanoes. Development of hands-on classroom activities. Normally offered through University Continuing Education. Field trips.

Prerequisite(s): Teaching credential and instructor consent.

Grading: Credit/No Credit

GEOL 105 - General Oceanography

3 unit(s)

Scientific examination of the impact of oceans on global society, and human impacts on the oceans, through classroom discussions of scientific and news media reports, and computer exercises.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

GEOL 107 - Prehistoric Life

3 unit(s)

Integrated interdisciplinary examination of the fossil record, including information from the fields of

paleontology, genetics and cosmology that aids in the understanding of organic evolution and periodic massive extinctions.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

GEOL 111 - Geology and the Environment

3 unit(s)

The effect of Earth processes on humans and their structures. Environmental problems related to earthquakes, landslides, minerals, energy, water and urban growth.

Lecture 3 hours/field trips.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENVS 111. Geology is responsible for scheduling.

Sustainability Focused - SDG 1: No Poverty

GEOL 112 - Hazards, Risks of Earthquakes and Volcanoes

3 unit(s)

How, where and why earthquakes and volcanic eruptions occur. Analysis of hazards posed by earthquakes and volcanoes. Risks incurred by humankind due to these hazards. Minimizing risk; economic, social and political problems associated with earthquakes.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

GEOL 120 - Fundamentals of Mineralogy

3 unit(s)

Laboratory course designed to give students basic skills for identifying minerals and basic understanding of geologic processes that form minerals. Emphasis is on hand specimen and microscope identification.

Misc/Lab: Lecture 2 hours / Lab 3 hours

Prerequisite(s): GEOL 1 and GEOL 7.

Grading: Letter Graded

GEOL 122 - Petrology

4 unit(s)

Identification of minerals and rocks in hand sample and under the microscope. Processes of formation, description, and classification of igneous, sedimentary and metamorphic rocks.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Prerequisite(s): GEOL 120; completion of or co-enrollment in CHEM 1A.

Grading: Letter Graded

GEOL 124 - Sedimentology and Stratigraphy

3 unit(s)

Study of the origin and description of sediment and sedimentary rocks; study of the formation, sequence, and correlation of stratified rocks.

Misc/Lab; Lecture 2 hours/lab 3 hours.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): GEOL 1 and GEOL 7; Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

GEOL 125 - Structural Geology

4 unit(s)

Recognition, interpretation and representation of structures of the Earth's crust. Analysis of basic principles of rock deformation.

Misc/Lab: Lecture 3 hours/lab and field 3 hours.

Prerequisite(s): MATH 19, GEOL 1, GEOL 7, GEOL 28

Grading: Letter Graded

GEOL 127 - Tectonics

3 unit(s)

Description of large-scale features of the Earth's crust and upper mantle and the processes which formed them. Emphasis on plate tectonics and its implications for the evolution of North America.

Prerequisite(s): Any 100W, GEOL 122, GEOL 124, and GEOL 125.

Grading: Letter Graded

GEOL 129A - Spring Field Geology

2 unit(s)

Field methods, field mapping and interpretation of geologic and tectonic history. Students stay at camp sites that vary from year to year.

Prerequisite(s): GEOL 120, GEOL 122, GEOL 124 and GEOL 125; or instructor consent.

Grading: Letter Graded

Note(s): Field Trip Fees Required.

GEOL 129B - Advanced Field Geology

4 unit(s)

Geologic field mapping and interpretation of geologic and tectonic history. Students stay at camp sites that vary from year to year.

Misc/Lab: Lab 6-12 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): GEOL 122, GEOL 124, GEOL 125, or Permission of Instructor

Grading: Letter Graded

GEOL 129C - Digital Geologic Field Mapping

2 unit(s)

Produce digital geologic maps and cross sections from field maps and remote sensing data in order to interpret an area's geologic history.

Lab 6 hours.

Prerequisite(s): Any 100W course, GEOL 137 or a GIS course preferably with ArcGIS. GEOL 129A or a similar field course is strongly encouraged.

Grading: Letter Graded.

GEOL 130 - Marine Geology

4 unit(s)

Introduction to the geology of continental margins and ocean basins. Discussions focus on crustal structures and the effect of plate tectonics and oceanographic processes on modern marine sedimentation.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Prerequisite(s): GEOL 1 or GEOL 7; GEOL 3 with instructor approval.

Grading: Letter Graded

GEOL 132 - Planetary Geology

3 unit(s)

Study of the surfaces and atmospheres of planetary bodies in the solar system, focusing on comparative planetology and geological processes at work. Topics include planetary differentiation, impact cratering, tectonics, volcanism, and geomorphic evolution. Explores terrestrial and gas giant planets and their moons.

Prerequisite(s): GEOL 1 or GEOL 3, or instructor consent.

Grading: Letter Graded

Note(s): This course has an Off Campus Field Trip component.

GEOL 134 - Geomorphology

4 unit(s)

Earth's surficial processes and landforms; effects of tectonics, climate and geology; landscape evolution. Landform interpretation using maps; surface water hydrology; applications.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): Introductory Geology course (GEOL 1, or GEOL 3 / GEOL 4L, or GEOL 7, or GEOL 9), MATH 19 (or equivalent), and PHYS 2A (or equivalent); all with a grade of C or better; or instructor consent.

Grading: Letter Graded.

GEOL 135 - Geochemistry

4 unit(s)

Application of geochemical and thermodynamic principles to solution of geologic problems. Topics include: equilibrium-disequilibrium reactions, major and trace element behavior, isotope systematics and modern analytical methods.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): CHEM 1A. Recommend CHEM 1B.

Grading: Letter Graded

GEOL 137 - Introduction to GPS/GIS for Geologic Applications

4 unit(s)

Introduction to digital geologic mapping and analysis using GoogleEarth and ArcGIS.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): GEOL 1 and GEOL 7, or instructor consent. Computer literacy assumed.

Grading: Letter Graded

GEOL 138 - Hydrogeology

4 unit(s)

Geological principles of the occurrence, accumulation and migration of water; groundwater as a manageable resource; groundwater geochemistry and contaminant transport.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): Recommend MATH 32 or MATH 32X, GEOL 125, and GEOL 135.

Grading: Letter Graded

Sustainability Focused - SDG 6: Clean Water and Sanitation

GEOL 140 - Principles of Engineering Geology

4 unit(s)

Qualitative and quantitative analysis of geologic factors influencing site selection, development and use; methods of data collection, interpretation and presentations.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): PHYS 2A or PHYS 50, and MATH 19 or MATH 30 or MATH 30X.

Grading: Letter Graded

GEOL 142 - Paleontology

4 unit(s)

Study of the major groups of invertebrate and vertebrate fossils and their use in the study of geology, paleoecology, and macroevolution.

Lecture 3 hours/lab 3 hours and field trips.

Prerequisite(s): GEOL 1 and GEOL 7, or instructor consent.

Grading: Letter Graded

Cross-listed with BIOL 142. Geology is responsible for scheduling.

GEOL 143 - Active Tectonics

4 unit(s)

This course will introduce students to the interdisciplinary field of Active Tectonics. The aim of the course is to provide students with a comprehensive and quantitative understanding of the tectonic and surficial processes that shape the Earth's surface.

Lecture 4 hours/Lab 3 hours.

Prerequisite(s): GEOL 1, GEOL 7, and GEOL 28.

Grading: Letter Graded

GEOL 145 - Earth System Science

4 unit(s)

Exploration of the interconnected systems and processes that have driven Earth's evolution over time and continue to function today. Capstone course that includes course projects and labs.

Prerequisite(s): GEOL 1, GEOL 7 or instructor consent

Corequisite(s): One semester of Chemistry

Grading: Letter Graded

GEOL 147 - Introduction to Applied Geophysics

4 unit(s)

Introduction to modern geophysical techniques with emphasis and environmental applications. Field techniques and case histories.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): PHYS 2A and PHYS 2B (or equivalent). Any 100W, GEOL 1, and GEOL 7.

Grading: Letter Graded

Sustainability Focused - SDG 15: Life on Land

GEOL 150 - Field Studies in Natural History

1-2 unit(s)

Field courses given on site, typically covering general ecology, botany, geology, zoology and specialized natural areas such as Baja California, Death Valley, seacoasts and mountains. Repeatable for up to a total of 3 units of credit when location or content changes.

Satisfies B3: Laboratory Science.

Grading: Letter Graded

Note(s): Not an elective in the department majors.

Cross-listed with BIOL 150. Biological Sciences is responsible for scheduling.

Sustainability Related - SDG 15: Life on Land

GEOL 174 - Hazardous Materials

3 unit(s)

Review of current methods and procedures for management of hazardous materials and hazardous wastes; analysis of contaminated systems and remedial actions.

Prerequisite(s): PHYS 51 and CHEM 1A, or instructor consent.

Grading: Letter Graded

Cross-listed with CHE 174. Chemical Engineering is responsible for scheduling.

Sustainability Focused - SDG 12: Responsible Consumption and Production

GEOL 180 - Individual Studies

1-3 unit(s)

Advanced lab or field work.

Prerequisite(s): Instructor consent. Not available to Open University Students

Grading: Credit/No Credit

GEOL 184 - Directed Reading

1-3 unit(s)

Reading of books, journals and papers chosen to fill gaps in training. Evaluation through weekly reports and conference.

Prerequisite(s): Not available to Open University Students

Grading: Credit/No Credit

GEOL 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

GEOL 213 - Advanced Igneous and Metamorphic Petrology

4 unit(s)

Igneous and metamorphic processes and the evolution of the lithosphere. Application of field, petrographic and chemical data to models of petrogenesis. Laboratory emphasizes microscope studies and computer modeling.

Lecture 3 hours/lab 3 hours; field trips.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): GEOL 121 (or equivalent).

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

GEOL 214 - Volcanology

4 unit(s)

Investigates the physical and chemical characteristics of volcanic systems from magma generation and ascent to eruption at the surface. Particular focus on eruption styles and products under varying ambient conditions will be given.

Lecture 3 hours/lab 3 hours.

Grading: Letter Graded

GEOL 222 - Advanced Sedimentary Geology

4 unit(s)

Analysis of sedimentary facies, patterns of facies architecture and major controls on evolution of sedimentary basins.

Misc/Lab: Lecture 3 hours/lab 3 hours; field trips.

Prerequisite(s): GEOL 123 and GEOL 127.

Grading: Letter Graded

GEOL 231 - Advanced Structural Geology and Tectonics

4 unit(s)

Analysis of deformed rocks with emphasis on deformation mechanisms, small-scale structures, shear zones, faults and folds. Techniques of strain analysis and analyzing structure on maps are emphasized in the laboratory.

Lecture 3 hours/lab 3 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): GEOL 125, GEOL 143, or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

GEOL 234 - Advanced Geomorphology

4 unit(s)

We will investigate the role of geomorphology in affecting large-scale processes such as mountain uplift and the global climate. Coursework will include the manipulation of data sets from the Himalayas, topographic analysis of the Sierra Nevada, and modeling with Matlab.

Lecture 3 hours/lab 3 hours; 3-day field trip required.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): GEOL 134 (or equivalent).

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

GEOL 238 - Advanced Hydrogeology

4 unit(s)

Numerical methods in groundwater modeling, vadose zone monitoring and transport and geochemistry of natural and contaminated waters.

Lecture 3 hours/lab 3 hours; field trips.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): GEOL 138 or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Focused - SDG 6: Clean Water and Sanitation

GEOL 242 - Advanced Paleontology

4 unit(s)

The lecture portion of this course will be conducted as a seminar; students will read and discuss classic and important newer papers on macroevolutionary theory and paleobiology. In the lab portion of this course, students will use fossil samples to develop and test scientific hypotheses that will be part of a semester-long project.

Misc/Lab: Lecture 4 hours/Lab 3 hours.

Prerequisite(s): Suitable background in geology or evolutionary biology.

Grading: Letter Graded

Cross-listed with BIOL 242. Geology is responsible for scheduling.

GEOL 255 - Advanced Geology

4 unit(s)

Selected topics in geology. Topics change with each offering.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Suitable background in geology.

Grading: Letter Graded

GEOL 285 - Seminar

2 unit(s)

Fundamental problems in geology. Topics change with each offering. May be repeated when content changes.

Misc/Lab: Discussion 2 hours.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

GEOL 298 - Research

1-4 unit(s)

Advanced individual study in geology.

Prerequisite(s): Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

GEOL 299 - Master's Thesis

1-4 unit(s)

Prerequisite(s): Advancement to candidacy for the master's degree. Not available to Open University Students

Grading: Mandatory Credit/No Credit/RP

GEOL 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis.

Prerequisite(s): Outstanding RP grade in a preceding semester in a thesis class

Grading: Credit/No Credit/No Degree Credit

German

GERM 1A - Elementary German

4 unit(s)

Basic structure of the language in the context of culture.

Satisfies C2: Humanities.

Grading: Letter Graded

GERM 1B - Elementary German

4 unit(s)

Basic structure of the language in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): GERM 1A or equivalent.

Grading: Letter Graded

GERM 25A - Intermediate German

4 unit(s)

Review of basic grammar expansion of vocabulary and communication skills in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): One year of college-level German (or equivalent or SJSU placement exam).

Grading: Letter Graded

GERM 25B - Intermediate German

4 unit(s)

Introduction of complex grammatical features, continued expansion of vocabulary and communication skills in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): Three semesters of college German or equivalent.

Grading: Letter Graded

GERM 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

GERM 180 - Individual Studies in German

1-3 unit(s)

Individual work by arrangement.

Prerequisite(s): Upper division standing in German (or equivalent with grade of "B") and instructor consent.

Grading: Credit/No Credit

GERM 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Gerontology

GERO 99 - Death, Dying and Religions

3 unit(s)

Is death the end or the beginning? Learn how people integrate the physical, emotional, psychological, and spiritual dimensions of living and dying. Examine religious teachings and practices for making death personally meaningful, socially significant, or even politically powerful.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Cross-listed with HUM 99 / RELS 99. Humanities is responsible for scheduling.

GERO 107 - Aging and Society

3 unit(s)

Social, psychological and physiological aging processes. Implications of aging for individuals and societies, with emphasis on issues related to diversity, equality and gender in the U.S.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with PH 107 / SCWK 107. Social Work is responsible for scheduling.

Sustainability Focused - SDG 10: Reduced Inequalities

GERO 108 - Health in Later Life

3 unit(s)

Normal age-related health changes and common illnesses in later life. Health status, behavior and attitudes of older adults. The continuum of health care services. Professional and ethical issues in service delivery.

Prerequisite(s): College biological sciences course.

Grading: Letter Graded

Cross-listed with PH 108. Social Work is responsible for scheduling.

GERO 111 - Medical Ethics

3 unit(s)

(Formerly PHIL/GERO/NURS/HS 111) Selected ethical problems in health care practices. For example, abortion, patient rights, national health care, euthanasia and genetic engineering, with emphasis on philosophical methods.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter graded.

Cross-listed with PHIL 111 Philosophy is responsible for scheduling.

Sustainability Related - SDG 3 - Good Health and Well-Being

GERO 114 - Psychology of Aging

3 unit(s)

Psychological development of middle-aged and older adults emphasizing normative (typical) development in the context of cognitive, socioemotional, biological, and cultural processes. Course content also includes age-related health problems and their prevention.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

Cross-listed with PSYC 114. Psychology is responsible for scheduling.

GERO 116 - Aging and Nutrition

3 unit(s)

The aging process, physiological changes, dietary requirements, diseases, environmental factors, housing, economic status, handicaps, personal relations and current programs for the aged.

Prerequisite(s): One college nutrition course or instructor consent.

Grading: Letter Graded

Cross-listed with NUFS 116. Nutrition, Food Science and Packaging is responsible for scheduling.

Sustainability Focused - SDG 3: Good Health and Well-Being

GERO 133 - Gerontology Field Work

3 unit(s)

Supervised work experience in an organization providing services to older adults. Short-term projects, observation of organizational dynamics and individual skills development.

Prerequisite(s): Completion of 9 units in gerontology.

Grading: Credit/No Credit

GERO 166 - Medical Sociology

3 unit(s)

Sociological analysis of medical and mental health institutions, values and roles. Patient-doctor interaction, influence of hospital structure on health care, social class and illness, cultural determinants of illness and related areas of old age (gerontology) and death.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

Cross-listed with SOCI 166. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.

Sustainability Related - SDG 3: Good Health and Well-Being

GERO 185 - Leisure, Recreation and Aging

3 unit(s)

Theory and practice related to the role of leisure services in maximizing the quality of life for older adults. Interrelationship of leisure and other supportive services for older adults in community and institutional settings.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with RECL 185. Public Health and Recreation is responsible for scheduling.

GERO 251 - Social Work in Health and Aging

3 unit(s)

Knowledge and skill development for practice from a transcultural multi-systems perspective in aging and health care settings. Emphasis on Latino, African American, Asian American, and other diverse client

systems. Conceptual frameworks for practice at micro, mezzo, and macro levels.

Prerequisite(s): SCWK 220 and SCWK 221.

Grading: Letter Graded

Cross-listed with SCWK 251. Social Work is responsible for scheduling.

Sustainability Focused - SDG 10: Reduced Inequalities

GERO 260 - Multidisciplinary Health Promotion in Later Life

3 unit(s)

Multidisciplinary assessment and planning. Principles of promoting health and preventing disability in later life. Physical, psychological, social, cultural, spiritual, and environmental factors that affect length and quality of life.

Prerequisite(s): BIOL 66 or GERO 108 or instructor consent.

Grading: Letter Graded

Cross-listed with HPRF 260 / NUFS 260. Nutrition, Food Science and Packaging is responsible for scheduling.

Sustainability Related - SDG 10: Reduced Inequalities

GERO 265 - Seminar in Cognitive Disorders

3 unit(s)

Provides a framework for better understanding the process of cross-generational communication and the improvement of communication competencies for interaction with cognitively impaired persons.

Grading: Letter Graded

Cross-listed with EDSP 265. Communicative Disorders and Sciences is responsible for scheduling.

GERO 268 - Lifespan Development

3 unit(s)

Examination of human development across the lifespan, through multiple theoretical and cultural perspectives, with a holistic integration of physical, cognitive, and socio-emotional aspects of development. To deepen knowledge to assist children, adolescents, and adults with life challenges.

Grading: Letter Graded

Cross-listed with EDCO 268. Counselor Education is responsible for scheduling.

GERO 299 - Master's Thesis

3-6 unit(s)

Supervised individual research in gerontology. Preparation for doctoral level study.

Repeatable for credit.

Prerequisite(s): Advancement to candidacy for the master's degree and instructor consent.

Grading: Credit/No Credit/RP.

Public Health and Recreation is responsible for scheduling.

Global Studies

GLST 1A - Introduction to Global Studies

3 unit(s)

Introduces students to the scope of global studies as seen from the social and cultural perspectives. Readings based on the best critical studies of globalization and its outcomes. Occasionally, visiting professors will give new academic approaches to this field.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

GLST 1B - Introduction to Global Studies

3 unit(s)

Presents scientific ways for understanding global phenomena and for developing policy to achieve positive outcomes of globalization. Interdisciplinary approaches require new analytical models. Visiting professors will collaborate with instructor.

Satisfies B2: Life Science.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

GLST 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

GLST 100W - Writing Workshop

3 unit(s)

Development of skills required for geographical research and writing.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

Cross-listed with GEOG 100W. Urban and Regional Planning is responsible for scheduling.

GLST 143 - Gender, Power, Intl Dev

3 unit(s)

Explore issues of poverty, gender, economic transformations, inequality while examining the history of development. Consider various meanings given to development by women and men, primarily as residents of particular regions, but also as aid workers, policy makers, and government officials. Explore the underlying political, economic, social, and gender dynamics that make "development" an ongoing problem world-wide.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

GLST 156 - Technology of the Modern World

3 unit(s)

Analysis of development and global diffusion of technology in the 20th and 21st centuries. Interrogates historical narratives of modern technology, reflecting on broader ethical, political, human significance of modern technology. Ecological impacts of technologies. Power, problems, promise of technology.

Grading: Letter Graded

Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

GLST 162 - Contemporary Global Issues

3 unit(s)

Interdisciplinary approach to contemporary global issues. Understanding and analyzing global issues are the focus of the course. Students will explore, analyze, and articulate the unique challenges each of the issues pose to the global community in ways that will foster student's ability to understand and evaluate causes, consequences, and responses to global challenges.

Prerequisite(s): Upper Division standing or Instructor Consent

Grading: Letter Graded

Sustainability Focused - SDG 17: Partnerships for the Goals

GLST 164 - Advanced Seminar in Global Citizenship

3 unit(s)

Designed to encourage and inspire students to develop their own understanding of the concept of global citizenship and to develop informed perspectives related to concerns of the global community. Students will be asked to consider the impact they may have, as well as their individual and collective responsibilities, as global citizens, within their local, national, and global communities.

Prerequisite(s): Upper Division Standing or Instructor Consent

Grading: Letter Graded

Sustainability Focused - SDG 17: Partnerships for the Goals

GLST 167 - Changing Ecologies of Globalization

3 unit(s)

Environmental and human issues and challenges 1492 to present. Global environmental shifts & relationship to social, demographic, cultural, political change. Human interaction with natural environment.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 17: Partnerships for the Goals

GLST 179 - Capstone Seminar in Global Studies

3 unit(s)

Course is designed for majors to help them to gain coherence in their theoretical knowledge, factual grounding, international living, personal aptitudes, and career aspirations. It will also give them experience in interdisciplinary research through preparation of a major scholarly paper. The format includes discussion, group analysis, visiting professors, and individual work.

Prerequisite(s): Completion of GLST 1A, senior standing.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

GLST 188 - Special Topics in International Experiences

3 unit(s)

Study of modern history, government, immigration and impacts on development of diverse communities. Study of effects of immigration, economics, biases, and other factors on community development, as well as comparing and contrasting US and other cultural perspectives. Course offered as FLP in countries outside the U.S.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Course is repeatable for up to 6 units.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all

SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

GLST 189 - Global Experience

1-3 unit(s)

Required for Global Studies majors. Completion of Global Studies sponsored faculty-led international educational study, semester-long residence abroad, for formal study, research, service learning, or internship. Students will develop their programs with the advice and approval of the GLST advisor and the International Programs and Service office. Students may transfer in additional credits from approved study, with prior approval of the GLST advisor.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Completion of GLST 1A, junior standing.

Grading: Credit/No Credit

GLST 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Graphic Design

DSGD 63 - Fundamental Graphic Visualization

3 unit(s)

Critical examination and theories on how to work with two-dimensional compositional space and the interrelated basic principles, attributes, and elements of graphic design, includes the relationships between some production methods and materials.

Grading: Letter Graded

DSGD 83 - Digital Applications: Basics

3 unit(s)

The fundamental use of features and functions inherent within graphic software programs for graphic design.

Grading: Letter Graded

DSGD 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Letter Graded

DSGD 99 - Introduction to Typography

3 unit(s)

Study and demonstration of letterforms and fundamental typographic principles. Emphasis on the vocabulary of typographic form and its relationship to message/purpose.

Misc/Lab: Activity 6 hours

Prerequisite(s): GD majors: ANI 11 or ART 24, DSGD 83; ANI majors: ANI 11, ANI 71; IT majors: DSIT 33, DSIT 10, DSIT 83; ID majors: completion of DSID 22 or completion of DSGD 83 and concurrently enrolled in DSID 22

Grading: Letter Graded

DSGD 100 - Visual Communication & Process

3 unit(s)

Problems explore methods of visual organization used in graphic communication. Course promotes the critical examination and development of ideas, two-dimensional spaces, and three-dimensional structures, including the relationship between some production methods and materials.

Activity 6 hours.

Prerequisite(s): ANI 11 (or ART 24 or DSID 21 or DSIT 10), DSGD 63 (or ART 12 or ANI 10 or DSID 22 or DSIT 5), DSGD 83 (or ANI 71 or DSID 32 or DSIT 83), and DSGD 99. Allowed Declared Majors: BA Design Studies, BS Industrial Design, BFA Animation/Illustration, BFA Interior Design. Allowed Declared Minor: Graphic Design Minor.

Grading: Letter Graded

DSGD 102 - Intermediate Typography

3 unit(s)

Application of typographic principles to a diverse series of graphic design problems utilizing text and display letterforms, organizational systems, fundamental design theories and conceptual innovation.

Prerequisite(s): Pass BFA portfolio review, DSGD 104

Grading: Letter Graded

DSGD 103A - Advanced Typography I

3 unit(s)

Advanced conceptual investigations, verbal and visual problem solving utilizing typography and image.

Activity 6 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 104. Allowed Declared Major: Graphic Design.

Grading: Letter Graded

DSGD 104 - Introduction to Graphic Design

3 unit(s)

Familiarization to form and message development. Emphasis on visual concepts and fundamental design theory.

Activity 6 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): DSGD 100 and DSGD 99. Allowed Declared Majors: BA Design Studies, BS Industrial Design, BFA Animation/Illustration, BFA Interior Design. Allowed Declared Minor: Graphic Design Minor.

Grading: Letter Graded

DSGD 105 - Intermediate Graphic Design

3 unit(s)

Development of concepts combining image/form, message, typography and function with fundamental design theory.

Activity 6 hours.

Course is repeatable for a total of 6 units.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 104. Allowed Declared Major: Graphic Design.

Grading: Letter Graded

DSGD 106 - Advanced Graphic Design

3 unit(s)

Advanced and diverse series of topics confronting a wide variety of situations and needs emphasizing conceptual innovation, organization, planning and analysis.

6 hours activity.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 102, DSGD 186 and DSGD 110. Allowed Declared Majors: Graphic Design.

Grading: Letter Graded

DSGD 107A - Special Topics in Graphic Design

3 unit(s)

Comprehensive design problems utilizing design theories, analysis, experimentation, innovation and

conceptual development as systematic approaches to structuring various degrees of graphic design issues; database scientific visualization, graphic information system, publication design, and promotion & media graphics.

Misc/Lab: Lab 6 hours.

Prerequisite(s): Pass BFA Portfolio Review

Grading: Letter Graded

DSGD 107B - Special Topics in Experience Design

3 unit(s)

Capstone design problems utilizing design methodologies, theories, and analysis in the area of time-base multimedia design; narrative filming, kinetic typography in motion, interaction design, and event design as related to visual information design.

Misc/Lab: Lab 6 hours.

Prerequisite(s): Pass BFA Portfolio Review

Grading: Letter Graded

DSGD 108 - Graphic Design Portfolio

3 unit(s)

Portfolio preparation using various media and methods for effective professional presentation.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 105, and DSGD 186. Allowed Declared Majors: Graphic Design.

Grading: Letter Graded

DSGD 109 - Digital Apps: Motion & Interaction Design

3 unit(s)

Introduction to fundamental motion and interaction design. Promotes the critical examination and development of basic time-based media design, motion graphics design, and motions in web media based on design theory and design practices by using interdisciplinary approaches and the latest techniques.

Activity 6 hours.

Prerequisite(s): DSGD 63, DSGD 83, and DSGD 99. Allowed Declared Majors: BA Design Studies, BFA Graphic Design.

Grading: Letter Graded.

DSGD 110 - Visual Literacy: Image Making

3 unit(s)

A course that defines the ability to assess and utilizes communications composed of various visual images (hybridization of manual, analog, and digital processes) for goal oriented projects. Students will develop tools needed to critically examine the visual world and strategies for creating unique visual forms and process of visual encoding and visual decoding for incorporating into graphic design projects.

Prerequisite(s): Pass BFA portfolio review; DSGD 104.

Grading: Letter Graded

DSGD 111 - Design Values and Professional Practices

3 unit(s)

Defines and investigates design practices, processes, materials, and vocation and their effects on society, environment, business, and intellectual property. Lectures, discussions, and group and individual projects explore applications of design thinking for positive local to global outcomes.

Misc/Lab: Activity 6 hours.

Prerequisite(s): ANI majors: ANI 50; GD majors: DSGD 63, DSGD 83; IT majors: DSIT 33, DSIT 83; ID majors: DSID 22 or DSGD 83.

Corequisite(s): DSID 22

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

DSGD 120 - Exhibition Design & Info Graphics

3 unit(s)

Introducing principles, processes, and vocabularies of exhibition design. A substantial amount of student activity in the classroom will address acquiring and refining the two- and three-dimensional visualization of objects and spaces.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 110, DSGD 186

Grading: Letter Graded

DSGD 127 - Design Practicum

3 unit(s)

Building a successful design career requires an understanding of best practices and the standards governing the ever-evolving business of graphic design. This course aims to explore the creative business processes, marketing, negotiation and pricing, ethical standards of design business, and professional relationships in design.

6 hours Activity.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 110, DSGD 186

Grading: Letter Graded

DSGD 131 - Motion Graphics

3 unit(s)

A capstone design problems course that exposes students to the principles, methodologies, and elements of motion graphics and narrative design. Students develop techniques and skills for synthesizing the language of motion simultaneously with an emphasis on narrative structure, and text and image in relation to time-based media. The project is examined in terms of its historical, cultural and conceptual implications.

Activity 6 hours.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 102, DSGD 110 and DSGD 186.
Grading: Letter Graded

DSGD 132 - User Interface & Interaction Design

3 unit(s)

An advanced course focusing on the fundamental theory and practice of computer user interface and interactive design with emphasis on: the 2D graphic digital user interfaces, the current interaction development technology, theory, process and methods, and its overall impact on culture and society.

Activity 6 hours.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 102, DSGD 110 and DSGD 186.
Grading: Letter Graded

DSGD 141 - 3D Branding & Promotion Design

3 unit(s)

Experimental problems and themes exploring theories, strategies, and methodologies in 3D branding and Promotion Design such as marketing communication tools, packaging and P.O.P design, emphasizing innovative expression. Projects also examine contextual and conceptual prototyping for point of purchase display.

Activity 6 hours.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 102, DSGD 110 and DSGD 186.
Grading: Letter Graded

DSGD 150 - Degree Project: Senior Studio

3 unit(s)

In-depth studies course focused on research concerning current issues in visual communication/information/graphic design fields. The student develops an individual design approach, process, and methodology for the application of graphic design solutions as the thesis project that fulfills the criteria for the BFA Graphic Design.

Activity 6 hours.

Prerequisite(s): Pass BFA Portfolio Review, DSGD 105, and DSGD 186.
Grading: Letter Graded

DSGD 176A - Graphic Design History and Theory

3 unit(s)

The history of graphic design and typography with an emphasis on the 20th century. Define technological, historical and theoretical concerns and influences on individuals and movements in graphic design.

Prerequisite(s): ARTH 72, completion of Area Z, or instructor consent.
Grading: Letter Graded

Cross-listed with ARTH 176A. Art and Art History is responsible for scheduling.

DSGD 186 - Digital Applications: Methodology

3 unit(s)

Exposes students to the tools, skill sets, and languages that are essential to understanding the fundamentals for web based information and interaction design principles and discovery of its practice in the profession. Activity 6 hours.

Activity 6 hours.

Prerequisite(s): BFA Graphic Design Major, or Interaction Design Minors must complete DSID 126.

Grading: Letter Graded

DSGD 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Health & Human Sciences

CHHS 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

CHHS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 6 units.

Grading: Mixed Grading

CHHS 198ITL - International Experience Seminar

1-6 unit(s)

Seminar for students participating in an approved international experience activity. Students will analyze and reflect upon their international experience in relation to discipline-specific knowledge acquired through academic study, their intended career, and their identity as a global citizen.

Grading: Credit/No Credit

Health Professions

HPRF 260 - Multidisciplinary Health Promotion in Later Life

3 unit(s)

Multidisciplinary assessment and planning. Principles of promoting health and preventing disability in later life. Physical, psychological, social, cultural, spiritual, and environmental factors that affect length and quality of life.

Prerequisite(s): BIOL 66 or GERO 108 or instructor consent.

Grading: Letter Graded

Cross-listed with GERO 260 / NUFS 260. Nutrition, Food Science and Packaging is responsible for scheduling.

Sustainability Related - SDG 3: Good Health and Well-Being

Health Science

HS 90 - Introduction to Health Science Professions

3 unit(s)

Provides an overview of the U.S. healthcare system and the health workforce. Specifically, this course will examine issues affecting healthcare delivery including social determinants of health, healthcare reform, and healthcare insurance. This course will also explore the roles and educational requirements of physicians, dentists, nurses, occupational therapists, and other health professionals.

Grading: Letter Graded.

HS 110 - Interprofessional Health Teams

3 unit(s)

Course provides an overview of interprofessional health teams and collaborative care. Competencies for interprofessional collaboration, group and team theory will be introduced and relevant concepts including interprofessional practice, models of teamwork, bias, values and ethics, communication, and the roles and responsibilities of the different professionals of a collaborative health care team will be outlined.

Grading: Letter Graded.

Hebrew

HEBR 1A - Elementary Hebrew

4 unit(s)

Basic skills and structure of the Hebrew language, in the context of the history and range of cultural expressions in the Hebrew speaking world.

Satisfies C2: Humanities.

Grading: Letter Graded.

Cross-listed with JWSS 1A / RELS 1A. World Languages and Literatures is responsible for scheduling.

HEBR 1B - Elementary Hebrew

4 unit(s)

Second level of Elementary Hebrew, further developing students' proficiency in reading, writing, speaking, and listening in Modern Hebrew, delving deeper into the context of the history and range of cultural expressions in the Hebrew speaking world.

Satisfies C2: Humanities.

Prerequisite(s): HEBR 1A (or equivalent).

Grading: Letter Graded.

Cross-listed with JWSS 1B / RELS 1B. World Languages and Literatures is responsible for scheduling.

HEBR 10X - Elementary Hebrew- Individual Learning

1-3 unit(s)

Basic structure of the language in the context of culture.

Course may be repeated for credit for up to 3 units.

Grading: Letter Graded

HEBR 15A - Intermediate Hebrew

3 unit(s)

Developing speaking skills.

Prerequisite(s): HEBR 1A and HEBR 1B (or equivalent).

Grading: Letter Graded.

Cross-listed with JWSS 15A / RELS 15A. World Languages and Literatures is responsible for scheduling.

HEBR 15B - Intermediate Hebrew

3 unit(s)

Developing speaking skills.

Prerequisite(s): HEBR 1A and HEBR 1B (or equivalent).

Grading: Letter Graded.

Cross-listed with JWSS 15B / RELS 15B. World Languages and Literatures is responsible for scheduling.

HEBR 15X - Intermediate Hebrew- Individual Learning

1-3 unit(s)

Developing speaking skills.

Course may be repeated for credit for up to 3 units.

Grading: Letter Graded

HEBR 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

HEBR 102A - Advanced Hebrew

3 unit(s)

Readings, grammar, discussion and composition.

Prerequisite(s): Four semesters of college Hebrew (or equivalent).

Grading: Letter Graded

Cross-listed with JWSS 102A / RELS 102A. World Languages and Literatures is responsible for scheduling.

HEBR 102B - Advanced Hebrew

3 unit(s)

Readings, grammar, discussion and composition.

Prerequisite(s): 12 units of college Hebrew (or equivalent).

Grading: Letter Graded

Cross-listed with JWSS 102B / RELS 102B. World Languages and Literatures is responsible for scheduling.

HEBR 102X - Advanced Hebrew- Individual Learning

1-3 unit(s)

Readings, grammar, discussion and composition.

Course may be repeated for credit for up to 3 units.

Grading: Letter Graded

HEBR 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

History

HIST 1A - World History to 1500

3 unit(s)

Introduces students to the world's regions and civilizations as interconnected entities. HIST 1A examines the growth and development of traditional civilizations to 1500. HIST 1B surveys the transformation of civilizations since 1500.

Satisfies D: Social Sciences.

Grading: Letter Graded.

HIST 1B - World History from 1500

3 unit(s)

Introduces students to the world's regions and civilizations as interconnected entities. HIST 1A examines the growth and development of traditional civilizations to 1500. HIST 1B surveys the transformation of civilizations since 1500.

Satisfies D: Social Sciences.

Grading: Letter Graded.

HIST 10A - Western Civilization

3 unit(s)

History and culture of Europe; social and political structures; roles of individuals and groups; relationships among ideas, institutions, society and culture; to 1648.

Satisfies D: Social Sciences.

Grading: Letter Graded.

HIST 10B - Western Civilization

3 unit(s)

History and culture of Europe; social and political structures; roles of individuals and groups; relationships among ideas, institutions, society and culture; 1648 to present.

Satisfies D: Social Sciences.

Grading: Letter Graded.

HIST 15 - Essentials of U.S. History

3 unit(s)

Treatment of essentials of U.S. history. Satisfies the American Institutions (US1) and the GE Area D: Social Sciences requirements.

Satisfies D + US1: Social Sciences + US History.

Grading: Letter Graded.

HIST 20A - History of the American People

3 unit(s)

Survey of continuity and change in society, culture, institutions and environment. Origins through slavery conflict.

Satisfies American Institutions US1: US History.

Grading: Letter Graded

HIST 20B - History of the American People

3 unit(s)

Survey of continuity and change in society, culture, institutions and environment. Emergence of modern society and world power status.

Satisfies American Institutions US1: US History.

Grading: Letter Graded

HIST 50 - Historical Process: Understanding Historical Reasoning

3 unit(s)

Modes and skills of practical logic and reasoning through study of historical method. Historical problems examined to that end.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded

HIST 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

HIST 99 - History Fundamentals

3 unit(s)

An introduction to the skills, technology and technique of history reading, writing and research. It is a prerequisite to HIST 100W. Sophomores and transferring juniors are required to take this course.

Prerequisite(s): Open to History and Social Science Teacher Preparation majors only; lower or upper division standing.

Grading: Letter Graded

HIST 100W - History Writers' Workshop

3 unit(s)

Development of skills required for the art and practice of historical research and writing. Library research, oral reports and written exercises dealing with a variety of historical problems.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): HIST 99 required or Department permission. A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: History and Social Science.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

HIST 102 - Historiography

4 unit(s)

Critical study of the writings of great historians.

Prerequisite(s): HIST 99 and HIST 100W.

Grading: Letter Graded

HIST 104 - Advanced Topics in Ancient History

4 unit(s)

An investigation in depth of selected periods or topics in Ancient history. Repeatable for credit when topic changes up to 8 units.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

HIST 109A - History of China

4 unit(s)

Traditional society from earliest times to 1800.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

Cross-listed with ASIA 109A. History is responsible for scheduling.

HIST 109B - History of China

4 unit(s)

China's revolutions and ongoing modernization.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 109B. History is responsible for scheduling.

HIST 110A - History of Japan

4 unit(s)

Development of state and society from prehistoric times to 1750. Major topics include the controversy over the origins of the Japanese people; the adaptation of Chinese cultural, religious, and political models; the role of the emperor in state formation; the classical era of Japanese culture during the Heian period; the rise of the samurai elites; and the development of military rule under the shoguns.

Prerequisite(s): Upper division standing or consent of instructor.

Grading: Letter Graded

Cross-listed with ASIA 110A. History is responsible for scheduling.

HIST 110B - History of Japan

4 unit(s)

Since 1750 emphasizing the process of modernization.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 110B. History is responsible for scheduling.

HIST 111 - Special Topics in Jewish Studies

3 unit(s)

Special Topics in Jewish Studies. Topics vary and will be announced each semester. Repeatable for credit under different subtitles.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with HUM 111 / JWSS 111 / RELS 111. History is responsible for scheduling.

HIST 112 - Ancient West to 500 BCE

4 unit(s)

Political, social and cultural history of the Ancient West (Europe, the Middle East and North Africa, from ca. 15,000 BCE to 500 BCE).

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 114 - The Ancient West, 500 BCE-400 CE

4 unit(s)

Political, social, and cultural history of the Ancient West (Europe, the Middle East, and North Africa), from ca. 500 BCE to 400 CE.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

HIST 118 - Yiddish History and Culture

3 unit(s)

Introduces Yiddish as a lens through which to explore some of the major historical trends in Eastern European and American Jewish life, such as Hasidism, the Jewish Enlightenment (Haskalah), nationalism, immigration, secularization, and antisemitism.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): Students are strongly encouraged to satisfy GE Areas R, S, and V with courses from departments other than the major department.

Cross-listed with JWSS 118. History is responsible for scheduling.

HIST 121A - Medieval Worlds, 400-1000

4 unit(s)

This course surveys European Medieval History from the late fourth century through the first millennium. It

examines the political, economic, social, cultural, and religious changes that constituted the transformation of the antique world into a unique "European" civilization.

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 121B - Medieval Worlds, 1000-1500

4 unit(s)

From 1000 - 1500 emphasizing growth of papal power, commercial revolution and revival of urban life, twelfth century Renaissance, interactions between the European, Byzantine, and Islamic worlds, and late medieval transformations leading to modernity

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 124 - Early Modern Europe

4 unit(s)

The European world in transition from 1580 to 1750. A continuation of HIST 122 , exploring the central place of the princely court in the transformation of politics, religion, art, culture, science, technology and philosophy. Introduction to the Enlightenment.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

HIST 126 - Advanced Topics in Medieval History

4 unit(s)

An investigation in depth of selected periods or topics in Medieval history. Repeatable for credit when topic changes for up to 12 units.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Departmental consent required.

Grading: Letter Graded

HIST 130 - Military History to 1500

4 unit(s)

The development of military force and warfare from its origins to 1500.

Grading: Letter Graded

HIST 131 - Military History from 1500

4 unit(s)

Traces the development of military force and warfare from 1500 to the present. Various aspects of military conflict are considered including technology, organization, culture and leadership. The role of war and armies in culture and in the development of civilization are considered. Students learn about the sources for military history and how historians use them, and are challenged to think about the "why" of military history,

its development and its impact.

Grading: Letter Graded

HIST 132 - Advanced Topics in World History

4 unit(s)

Aspects of world history under various topics. Repeatable for credit when topic changes for up to 12 units.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

HIST 136 - World Jewish History

3 unit(s)

History of the Jewish people and Judaism around the world, from their origins to the present. Covers Jewish development, both as an ethnic group and as a religion, with an emphasis on the diverse ways in which Jews responded to their circumstances. A major focus is the effect of Judaism and the Jews on other cultures and societies.

Satisfies SJSU Studies Area V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended (HIST 100W preferred).

Grading: Letter graded.

HIST 143 - Europe, 1750-1900

4 unit(s)

Major political, economic, social and cultural themes of European history from the Enlightenment to 1900.

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 144 - Europe, 1900-1945

4 unit(s)

A history of political, economic, social and cultural developments in Europe during the era of the two world wars.

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 145 - Europe and the World Since 1945

4 unit(s)

Political, economic and social developments since World War II, with emphasis on Europe.

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 146 - Advanced Topics in European History

4 unit(s)

An investigation in depth of selected periods or topics in European history.

Repeatable for credit when topic changes up to 12 units.

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 153 - History of Women in Europe

3 unit(s)

Changes in women's private and public roles in diverse national, class, religious, ethnic and racial contexts from Ancient Greece to Modern Europe.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 5: Gender Equality

HIST 155 - 20th Century World

3 unit(s)

Global perspectives on a century of scientific progress that also saw the violent deaths of millions, with emphasis on the decline of traditional imperialism and the ideological contention that led to World War II and the Cold War.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

HIST 162 - Colonial Latin America

4 unit(s)

The course covers the colonial administration and society of the Spanish and Portuguese colonies in the New World. I also look at social, economic, and political conditions of the Iberian Peninsula and of the Amerindian empires on the eve of the conquest. The course concludes with an overview of the independence movements in Hispanic America and Brazil.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

HIST 163 - Modern Latin America, 1800-Present

4 unit(s)

Latin America since 1800. Focus on major political changes, such as independence, wars, popular uprisings, and systems of government. Also economic and cultural affairs, especially when they disrupt existing societies, and outstanding leaders who charted their nations' destinies.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

HIST 167 - Advanced Topics in Latin American History

4 unit(s)

An investigation in depth of selected periods or topics in Latin American history. Repeatable for credit when topic changes up to 12 units.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

HIST 170 - Topics in American History

3 unit(s)

An investigation in depth of selected periods or problems. Repeatable for credit when topic changes.

Satisfies American Institutions US1: US History.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): No credit for history majors or minors.

Sustainability Related - SDG 10: Reduced Inequalities

HIST 170S - Topics in American History: American Identities and Institutions

3 unit(s)

An investigation in depth of selected periods or problems. This topic focuses on historical relationships between social groups and the political, social, economic and cultural institutions they created.

Satisfies SJSU Studies S+US1: Self, Society & Equality in the U.S. + American History.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

HIST 171 - U.S. Constitutional & Legal History

4 unit(s)

Origins and evolution of the United States Constitution and federal system from the American Revolution to the present.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

HIST 173 - New World Encounters, 1400-1750

4 unit(s)

Examines the first wave of European expansion, from 1400-1750, through the prism of cultural and religious interactions. Explores how Europeans, Africans, and Indians understood each other during European exploration, conquest, and colonization of the "New World".

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Note(s): Offered only occasionally.

Sustainability Related - SDG 10: Reduced Inequalities

HIST 174 - Colonial & Revolutionary America

4 unit(s)

Investigates the socio-political development of British North America from the 1600s to the era of the American Revolution. Examines how mentalities, voluntary and involuntary immigration, demographic catastrophes, rebellions, and religious revivals shaped the British Atlantic.

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 175 - Inventing America, 1800-1860

4 unit(s)

The history of the United States from 1800-1860. Topics include the rise of democratic political culture, industrialization, the emergence of a market economy, pivotal changes in institutions such as the family and church and the redefinition of key American values.

Prerequisite(s): Upper division standing

Grading: Letter Graded

HIST 176 - The Civil War and Reconstruction

4 unit(s)

Course takes a topical approach, examining the political, social, economic, military, and ideological dimensions of the Civil War and Reconstruction. Focus will be on the war and its aftermath as a

revolutionary experience rather than solely as a military struggle.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

HIST 177 - Industrial America, 1877-1920

4 unit(s)

Economic, social, and political history from the end of Reconstruction to the achievement of women's suffrage. Topics include the triumph of industrial capitalism, labor conflict, women's suffrage, Populism/Progressivism, race/ethnicity, and World War I.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

HIST 178 - Crash, Depression and War, 1920-1950

4 unit(s)

The United States from the "Roaring Twenties" through the Great Crash, the Great Depression, the New Deal, World War II, the home front, the Atomic Age, and the beginning of the Cold War.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

HIST 179 - Cold War America, 1950-Present

4 unit(s)

Modern history of the United States since 1950 including the Cold War, the Korean and Vietnam wars, the Civil Rights Movement, postwar society, culture, economics and politics.

Prerequisite(s): Upper division standing or instructor consent

Grading: Letter Graded

HIST 180 - Individual Studies

1-4 unit(s)

Individual work on special topics by arrangement.

Prerequisite(s): History majors or minors.

Grading: Credit/No Credit

HIST 181 - Advanced Topics in American History

4 unit(s)

An investigation in depth of selected periods or topics in American history.

Course is repeatable for credit when topic changes up to 12 units.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

HIST 184 - Directed Reading

1-4 unit(s)

Directed reading on a specific topic in history.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): History major/minor and instructor and department chair consent.

Grading: Credit/No Credit

HIST 185 - LGBTQ+ History in the United States

3 unit(s)

Students use an intersectional framework to examine LGBTQ+ history in the United States. The course emphasizes how the development of institutions and ideals, the formation of identities, and shifting contexts of equality and inequality have impacted LGBTQ+ people through time.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

HIST 188 - History of Women in the United States

3 unit(s)

A multi-faceted history of women in the United States from colonial times to the present.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Repeatable for credit.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

HIST 189A - California History to 1900

4 unit(s)

Topics include Native American civilizations, Spanish discovery and missions, the Mexican era, the American conquest, the Gold Rush, Chinese immigration, the railroad, growth, development, politics and class conflict.

Satisfies American Institutions US3: California Government.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Note(s): Satisfies American Institutions requirement in California government.

HIST 189B - California History Since 1900

4 unit(s)

Topics include the Progressive movement, migration, immigration, growth, prosperity, depression, agriculture, industry, war, politics, protests, riots, environmentalism, nativism, and diversity.

Satisfies American Institutions US3: California Government.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Note(s): Satisfies American Institutions requirement in California government.

HIST 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

HIST 197 - Introduction to Public History

4 unit(s)

Introduction to preservation and presentation of history to the community and to roles historians play in public agencies. Exploration of archives, museums and historic sites. Required for admission to Public History internship.

Prerequisite(s): Upper division standing or consent of instructor.

Grading: Letter graded.

HIST 199 - Public History Internship

3 unit(s)

Supervised placement in historical organizations, public institutions and community agencies concerned with preservation of history. May be repeated for 6 unit maximum.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

HIST 209 - Colloquium in Ancient and Medieval Europe

4 unit(s)

Intensive readings, discussions and reports on Ancient and Medieval Europe. For areas and field of emphasis see the schedule of classes. May be repeated when content changes.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

HIST 210A - Advanced Colloquium United States History

4 unit(s)

Intensive readings, discussions, and reports on American history in the seventeenth and eighteenth centuries. Repeatable for credit once with different instructor.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing

Grading: Letter Graded

HIST 210B - Advanced Colloquium United States History

4 unit(s)

Intensive readings, discussions, and reports on American history in the nineteenth century. Repeatable for credit once with different instructor.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 210C - Advanced Colloquium United States History

4 unit(s)

Intensive readings, discussions, and reports on American history in the twentieth century. Repeatable for credit once with different instructor.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing

Grading: Letter Graded

HIST 211 - Advanced Colloquium in Modern Europe

4 unit(s)

Intensive readings, discussions and reports. Topics have included the French Revolution, the Holocaust in Europe and issues of marginalization of gender and class during the modern period. May be repeated with different instructor or topic.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 220 - Advanced Colloquium in World History

4 unit(s)

Intensive readings, discussions and reports in Asian, African, European and North and South American history, in one of three eras: ancient and classical eras (before 1000), between 1000 and 1750 or since 1750. May be repeated with different instructor or topic.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

HIST 221 - Seminar in World History

4 unit(s)

An intensive study of some area, problem or period in world history. Topics have included World War II, the Atlantic Economy, World Slavery, British Imperialism. Repeatable for up to 8 units when course content changes.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 230 - Seminar in Ancient and Medieval Europe

4 unit(s)

An intensive study of some areas, problem or period in Ancient or Medieval Europe. Individual research with oral and written reports. May be repeated for up to 8 units with different instructor or topic.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 240 - Seminar in Pre-Twentieth Century Europe

4 unit(s)

An intensive study of some area, problem or period in European history before 1900. Topics have included economic, social and gender differences in Industrial Europe and social theories of Max Weber.

Satisfies GWAR: Graduation Writing Assessment Requirement.

May be repeated when content changes.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 241 - Seminar in Twentieth Century Europe

4 unit(s)

An intensive study of some area or problem. Individual research with oral and written reports. Topics have included the Cold War, European diplomacy and international security.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 272 - Seminar in American Diplomatic History

4 unit(s)

An intensive analysis of some chronological period, area or major problem in American diplomatic history. Individual research with oral and written reports.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 274 - Seminar in US Social & Cultural History

4 unit(s)

Intensive study of some phase of American social, cultural, and/or intellectual history. Individual research with oral and written reports. Topics have included class, race, ethnic, and gender differences. May be repeated when content changes. Repeatable for up to 8 units when topic changes.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): graduate standing or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

HIST 276 - Seminar in Early American History

4 unit(s)

An intensive study of some phase in, or problem of, American history from colonial period through the Civil War. Topics have included American independence from British control, the development of the industrial North and the colonization of the West. May be repeated when content changes.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 280 - Seminar in Recent American History

4 unit(s)

An intensive study of some phase or problem in the period from the Civil War to the present. Individual research with oral and written reports. May be repeated when content changes.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

HIST 283 - Seminar in California and Western History

4 unit(s)

An intensive study of an area, phase or period of history associated with California or the West. Individual research with oral and written reports. May be repeated for credit when course content changes.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GVAR in this master's program.

HIST 288 - Seminar in the History of Women in the United States

4 unit(s)

An intensive study of some phase of the history of women in the United States. Individual research with oral and written reports.

Satisfies GVAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GVAR in this master's program.

HIST 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

HIST 298 - Special Study

1-6 unit(s)

Advanced individual research.

Prerequisite(s): Instructor consent and approval by graduate advisor.

Grading: Mandatory Credit/No Credit/RP

Note(s): More than 3 units only in areas where graduate courses not normally offered.

HIST 299 - Master's Thesis

3-6 unit(s)

Open only to approved master's candidates in history. Reserved for students under Plan A.

Repeatable for credit.

Grading: Credit/No Credit/RP.

HIST 1290R - Culminating Experience Supervision

1 unit(s)

This course is offered in special sessions for 1 unit. It is required of, and limited to, graduate students who have completed all degree coursework and need only pass the Plan B exam to complete the program. Students who have completed all coursework, are preparing for the Plan B, and are not enrolled in any other classes must enroll in HIST1290R. The course is also required of graduate students who have an outstanding RP grade in a preceding semester in a thesis class. If one has an outstanding RP, this course must be taken unless the student is enrolled in any other course. By outstanding, it is meant that the RP grade has not been changed to any other grade, including a CR or NC. The RP grade in the thesis course remains on the official record until a culminating memo has been submitted by the graduate advisor to the Office of Graduate Admissions & Program Evaluations and the course instructor of the class in which an RP was received has petitioned for a grade change to CR.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): HIST 299 or completion of all coursework.

Grading: Credit/No Credit/No Degree Credit

Note(s): This course receives no degree credit and therefore cannot be used on the candidacy form or to fulfill graduation requirements.

Humanities

HUM 10 - Honors Global Oral and Rhetorical Cultures

3 unit(s)

Interdisciplinary study of human cultures, with special attention to the interplay of oral and written cultures and how orality and rhetoric continue to shape modern societies. Studies human cultures from what we know of their beginnings to the present along three axes of cultural interconnection: East-West; Global North-Global South; and past-present. Assignments focus on the development of oral and multimedia presentation skills in order to engage the material on its own terms.

Satisfies A1: Oral Communication.

Prerequisite(s): Completion of or concurrent registration in GE Area A2.

Grading: Letter Graded.

HUM 11 - Honors Critical Thinking across Global Cultures

3 unit(s)

Interdisciplinary study of how major ideas in philosophy and political philosophy from different global cultures can help us to understand world historical events and contemporary social issues. Assignments focus on the development of critical thinking and argumentative writing skills through 3-4 culture units, each focused on a "big question" that resonates across a wide geographic and historical span, covering three axes of cultural interconnection: East-West; Global North-Global South; and past-present. Questions may include how to live a good life, how to determine truth, or how to organize society.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded.

HUM 20 - Honors Global Material Cultures

3 unit(s)

Interdisciplinary study of human cultures from what we know of their beginnings to the present, with special attention to how culture is materialized through art, architecture, monuments, media, film, and theater representation. Assignments focus on developing the student's ability to interpret, evaluate, and respond to the histories and aesthetic qualities of important artifacts of human culture. Studies human cultures along three axes of cultural interconnection: East-West; Global North-Global South; and past-present.

Satisfies C1: Arts

Prerequisite(s): Completion of or concurrent registration in GE Area A2.

Grading: Letter Graded.

HUM 21 - Honors Reading Difference across Global Cultures

3 unit(s)

Interdisciplinary study of human cultures from what we know of their beginnings to the present, with special attention to how works of literature, art, philosophy, and history create, maintain, and undermine cultural differences. Assignments focus on developing the student's ability to interpret, evaluate, and respond to the role of human culture in the formation of communities and identities, to include consideration of East-West, Global North-Global South, and past-present cultural interactions.

Satisfies C2: Humanities.

Prerequisite(s): Completion of or concurrent registration in GE Area A2.

Grading: Letter Graded.

HUM 80 - Reading the World

3 unit(s)

By studying the history, philosophy, and science of reading, we build a transdisciplinary, critical approach to the value of reading comparative, historical, and cross-cultural texts. Activities and writing assignments enable students to understand the logical construction of arguments to become reflexive participants in reading.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded

HUM 90 - Bible History and Literature

3 unit(s)

The Bible in context of its history, literary sources and as a reflection of Jewish and Christian traditions. Motifs and themes in light of their original audience, historic usage and contemporary development.

Satisfies C2: Humanities.

Grading: Letter Graded

Cross-listed with JWSS 90 / MDES 90 / RELS 90. Humanities is responsible for scheduling.

HUM 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

HUM 95 - Introduction to Digital Humanities

3 unit(s)

Seminar course that explores how digital technologies create new possibilities for knowledge-making in the humanities. Students engage in digital humanities research using a variety of multi-modal methods to explore how technologies can be harnessed to tell stories, connect information, raise awareness, and visualize complex ideas in interactive ways.

Course is repeatable for up to 6 units.

Grading: Letter Graded

HUM 99 - Death, Dying and Religions

3 unit(s)

Is death the end or the beginning? Learn how people integrate the physical, emotional, psychological, and spiritual dimensions of living and dying. Examine religious teachings and practices for making death personally meaningful, socially significant, or even politically powerful.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Cross-listed with GERO 99 / RELS 99. Humanities is responsible for scheduling.

HUM 100W - Writing in the Humanities & Interdisciplinary Arts

3 unit(s)

Advanced workshop in composition and reading for the critical and comparative study of the humanities and interdisciplinary arts. Students explore and practice the thinking and writing skills that help us communicate insight, critique, interpretation, description, and analysis of arts, literature, history, and culture, including expository writing and library research. Readings and objects of study include a range of topics and at least two different art forms.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second-semester composition course (with a grade of C- or better); completion of core GE; and upper-division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

Cross-listed with AMS 100W / RELS 100W. Humanities is responsible for scheduling.

HUM 101 - Human Life: Let's Think About It

3 unit(s)

Introduction to interdisciplinary comparative and creative studies. A range of methodologies will be explored through two contrasting subjects. Students learn and synthesize approaches - geography, history, literature, arts, and social science - to achieve a holistic understanding of the topics.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

HUM 111 - Special Topics in Jewish Studies

3 unit(s)

Special Topics in Jewish Studies. Topics vary and will be announced each semester. Repeatable for credit under different subtitles. Repeatable for credit when topic changes.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with HIST 111 / JWSS 111 / RELS 111. History is responsible for scheduling.

HUM 114 - Legacy of Asia

3 unit(s)

Interdisciplinary focus on continuity and change in China and India as these ancient civilizations responded to challenges throughout their history.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ANTH 114 / ASIA 114 / RELS 114. Humanities is responsible for scheduling.

HUM 119 - Myths, Heroes, and Global Cultures

3 unit(s)

This course examines cultural developments in Europe, Asia and Africa during the ancient era and middle ages, roughly 700 B.C.E. to 1400 C.E., and the roles of pivotal figures, both mythic and historical, whose actions and ideas created our understanding of the early world.

Prerequisite(s): Upper division standing or permission of instructor

Grading: Letter Graded

HUM 122 - Topics in Comparative World Literature

4 unit(s)

An exemplary theme as treated in various literatures from different national sites, e.g., war, love, freedom, colonialism, environmental disaster.

Grading: Letter Graded

Cross-listed with COLT 122 / ENGL 122 / FORL 122. English and Comparative Literature is responsible for scheduling.

HUM 126 - Holocaust Literature

3 unit(s)

Survey of literature written by survivors or witnesses of the Holocaust, the destruction of European Jewry during World War II, focusing upon diaries, memoirs, fiction, and occasionally poetry and drama. Writers may include Elie Wiesel, Primo Levi, Anne Frank, Charlotte Delbo.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENGL 126 / FORL 126 / JWSS 126. English and Comparative Literature is responsible for scheduling.

HUM 128 - Perspectives on the Twentieth Century: The West in a Global Context

3 unit(s)

Literature and the arts of selected world cultures contextualized in significant events and concepts of the twentieth century, such as two world wars, totalitarian systems, the revolt against colonial powers, modernity and postmodernity, and the global challenge to western hegemony.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

HUM 134 - Religion Film & Media

3 unit(s)

Depictions of religion, religions, religious behavior, and religious propaganda in film and media. Exploring these from several perspectives, (e.g. emic and etic, cross-national, aesthetic) and examining the murky problem of "the truth" in the depiction of religious and spiritual experience.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with CA 134 / RELS 134. Humanities is responsible for scheduling.

HUM 141 - Medieval Literature

4 unit(s)

Middle English and continental literature, including such forms as the lyric, allegory, narrative, romance and biblically-based drama.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ENGL 141. English and Comparative Literature is responsible for scheduling.

HUM 142 - Contemporary Buddhism and its Roots

3 unit(s)

Teachings of Gautama, the Buddha and ways in which those teachings were modified in forms of Buddhism that followed: Theravada in southeast Asia and Mahayana in East Asia.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 142 / RELS 142. Humanities is responsible for scheduling.

HUM 144 - Chinese Traditions

3 unit(s)

Religious thought and practice of China's three Great Traditions (Buddhism, Taoism and Confucianism) as well as China's Little Tradition (Chinese folk religion). The role of these traditions within traditional Chinese culture and their relevance to the modern world, including China.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 144 / RELS 144. Humanities is responsible for scheduling.

HUM 148 - Children's Dance

3 unit(s)

Study of dance for children as personal expression through movement. Use of creative dance as a tool for the enrichment of learning. Experiencing dance in a variety of cultures.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with DANC 148. Film and Theatre is responsible for scheduling.

HUM 159 - Nature and World Cultures

3 unit(s)

The influence of industrialization and globalization on earth and the environment as seen through culture.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with AMS 159 / ENVS 159. Humanities is responsible for scheduling.

Sustainability Focused - SDG 15: Life on Land

HUM 160 - Special Topics in Humanities

3 unit(s)

Comparative studies of vital issues and enduring ideas (ethical, political, social, cross-cultural, etc.). Content varies each semester and with each instructor. Repeatable for up to 9 units of credit when course topic changes.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Upper-division Standing.

Grading: Letter Graded

Cross-listed with AMS 160. Humanities is responsible for scheduling.

HUM 169 - The American Dream

3 unit(s)

The American search for identity and meaning, the struggle for equality and success, in relation to myths, illusions and realities reflected in history, literature and the arts.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with AMS 169. Humanities is responsible for scheduling.

HUM 177A - Advanced Honors in Integrated Science, Social Science, and Humanities

6 unit(s)

SJSU Studies Honors cultivates scientific study of the physical universe and life forms, explores individuals and groups in the USA regarding diversity, equality, and institutional inequalities and practices, and develops appreciation for human cultures and their diverse development globally over time.

Lecture 3 hours/Seminar 3 hours

Satisfies SJSU Studies R+S+V: Earth, Environment, and Sustainability. + Self, Society & Equality in the U.S. + Cultures and Global Understanding with successful completion of HUM 177A/HUM 177B sequence.

Prerequisite(s): All-college GPA of 3.0 or higher. Completion of Core General Education and upper division

standing are prerequisites to all SJSU studies courses.

Pre/Corequisite(s): 100W pre- or corequisite strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

HUM 177B - Advanced Honors in Integrated Science, Social Science, and Humanities

3 unit(s)

SJSU Studies Honors cultivates scientific study of the physical universe and life form, explores individuals and groups in the USA regarding diversity, equality, and institutional inequalities and practices, and develops appreciation for human cultures and their diverse development globally over time.

Lecture 1.5 hours/Lecture 1.5 hours

Satisfies SJSU Studies R+S+V: Earth, Environment, and Sustainability. + Self, Society & Equality in the U.S. + Cultures and Global Understanding with completion of HUM 177A/HUM 177B sequence.

Prerequisite(s): HUM 177A

Grading: Letter Graded

HUM 179 - Issues in US Popular Culture

3 unit(s)

Music, sports, fashion, popular literature, television and other arts and activities that are main forms of influence, entertainment and escape. Expressions of American attitudes and ideas as important influences upon evolving culture and consciousness.

Prerequisite(s): Upper-division standing.

Grading: Letter Graded

Cross-listed with AMS 179. Humanities is responsible for scheduling.

HUM 180 - Individual Studies

1-3 unit(s)

Directed reading and thesis by arrangement.

Prerequisite(s): Department chair consent.

Grading: Credit/No Credit

HUM 190 - Senior Seminar in Humanities

3 unit(s)

Readings, discussions and individual research projects relating to an interdisciplinary theme selected by the instructor.

Pre/Corequisite(s): Upper-division Standing. Any 100W class.

Grading: Letter Graded.

Cross-listed with AMS 190 / RELS 190. Humanities is responsible for scheduling.

HUM 191 - Religion in America

3 unit(s)

History of social and intellectual influence of religious groups, stressing their African-, Asian-, European-, Latin- and Native-American roots. Highlights contact between groups, immigration, religious diversity and syncretism.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with RELS 191. Humanities is responsible for scheduling.

HUM 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Humanities & the Arts

HA 157SL - Community Action/Community Service

3 unit(s)

A campus-wide service learning program with opportunities for direct involvement with local community services, both off campus and on campus. Weekly seminars held on campus or at the field site, plus four to six hours of community service work per week at the field site.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with COMM 157SL / EDUC 157SL / ENGR 157SL / SCI 157SL. Communication Studies is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

HA 187 - Creative Team Practicum

3 unit(s)

Collaborative hands-on practical application of concepts and skills for written and visual communications solutions in a fast-paced client-driven environment supported by an interdisciplinary team of instructors of technical writing, graphic design, videography and photography. Enrollment requirements are based on section topic.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

Industrial and Systems Engineering

ISE 102 - Engineering Economic Systems

3 unit(s)

Systems analysis applied to economic decisions in engineering; comparison of alternatives based on cost breakdown structure and time value of money; system life-cycle process; life-cycle economic concepts, costing methodology and applications.

Corequisite(s): MATH 31 or MATH 31X, and ENGR 10. Or equivalents.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

ISE 103 - Life Cycle Engineering

3 unit(s)

Life cycle analysis of products focused on the contexts of reducing energy and the carbon footprint. Methods to analyze and evaluate the environmental impacts of engineering activities. Interdisciplinary case studies and projects related to life cycle engineering.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

ISE 105 - Introduction to Systems Engineering

3 unit(s)

Techniques for integrating engineering problem solving methods with systems theory including principles of problem identification, description, modeling, solution, and implementation; applying traditional and life cycle cost systems to assist engineers in decision making process through the product life cycle.

Prerequisite(s): MATH 31 or MATH 31X. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

ISE 110 - Manufacturing Processes

3 unit(s)

Fundamentals of manufacturing processes such as machining, forming, casting, molding and welding. Surface treatments, powder-based processes, and microfabrication methods. Materials behavior and

selection for manufacturing. Geometric dimensions and tolerancing.

Prerequisite(s): ME 20 with a grade of "C-" or better.

Pre/Corequisite(s): MATE 25.

Grading: Letter Graded

Cross-listed with ME 110. Mechanical Engineering is responsible for scheduling.

ISE 112 - Occupational Health Engineering

3 unit(s)

Legislative framework and historical perspective of work-related injuries and diseases: prevention assessments, legal and regulatory issues surrounding solutions to occupational health problems, principles of industrial hygiene and program management.

Prerequisite(s): Junior standing in engineering.

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

ISE 114 - Safety Engineering

3 unit(s)

Hazards, accident prevention and engineering approaches to the design of equipment, facilities and processes. Provides familiarity with system safety, system evaluation and evaluation of alternative countermeasures. Latest safety regulations and agencies responsible for their enforcement.

Prerequisite(s): Junior standing.

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

ISE 115 - Lean Integrated Manufacturing

3 unit(s)

Analyze, design and integrate manufacturing processes including application of Group Technology, CAM, automated material handling, and flexible automation within lean manufacturing environment. Manage automation in support of a lean enterprise improvement program based upon the Toyota Production System paradigm.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): ISE 120, CMPE 30 or equivalent, Engineering majors only.

Grading: Letter Graded

ISE 120 - Work Methods Design and Measurement

3 unit(s)

Design of efficient and effective work processes; includes process management, methods analysis and improvement and work measurement.

Misc/Lab: Lecture 2 hours/Lab 3

Prerequisite(s): MATH 32. Allowed Declared Majors: Any Engineering.

Corequisite(s): ISE 130.

Grading: Letter Graded

ISE 130 - Engineering Probability and Statistics

3 unit(s)

Probability theory, graphical displays of data, graphical methods of comparisons of samples and hypotheses testing. Statistical estimation and inference. Uses graphical statistical packages.

Prerequisite(s): MATH 32 or MATH 32X. Allowed Declared Majors: Any Engineering and graduate students.

Grading: Letter Graded.

ISE 131 - Statistical Process Control and Improvement

3 unit(s)

Statistical computations, sampling procedures, development and use of control charts and utilization of computerized statistical packages. Design of statistical quality control systems. The seven tools of quality; process capability studies.

Prerequisite(s): ISE 130 (with a grade "C-" or better) or equivalent. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

ISE 133 - Data Mining and Analysis for Industrial Systems

3 unit(s)

An introduction to the concepts of data mining and analysis, together with practical tools for their execution. Understanding of the fundamental steps of data mining and analysis, such as data collection, data understanding, data preparation, model construction, model evaluation, and model deployment. Applications of data analysis methods on real datasets, to show how they can support problem solving in industrial systems.

Prerequisite(s): ISE 194 or instructor consent.

Grading: Letter Graded

ISE 135 - Design of Experiments

3 unit(s)

Tests of composite hypotheses, analysis of variance, statistical decision theory, sampling procedures, design and implementation of statistical process control systems, response surface experimental design, Taguchi experimental design, system reliability, utilization of computerized statistical packages.

Prerequisite(s): ISE 130 (with grade of "C-" or better) or equivalent. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

ISE 140 - Operations Planning and Control

3 unit(s)

Design, implementation and evaluation of manufacturing, planning and control systems. Includes MRP II, ERP, JIT.

Prerequisite(s): ISE 102, ISE 120. Allowed Declared Majors: Any Engineering and graduate students.

Grading: Letter Graded

ISE 142 - Service Systems Engineering and Management

3 unit(s)

Operational productivity, operational quality strategy and information technology applications in the service sector through the use of tools, techniques and case studies. Contrasts manufacturing and service sector issues related to supply chain, process quality, information systems and other topics.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

ISE 151 - Engineering Management Systems in Global Society

3 unit(s)

Broad overview of engineering management theory and practice across geographically distributed operations with differing cultural perspectives, including: management's roles, responsibilities, skills, strategy and planning; management systems, human resource management, problem solving and decision-making; engineering ethics.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

ISE 155 - Supply Chain Engineering

3 unit(s)

A comprehensive coverage of supply chain topics; real world applications including logistics, inventory management, risk pooling, value of information, strategic alliance, procurement and outsourcing strategies, information technology, coordinated product and supply chain design, customer value, decision, support systems.

Prerequisite(s): ISE 140.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

ISE 160 - Healthcare Delivery Systems

3 unit(s)

Overview and analysis of health care delivery systems in the US with emphasis on the assessment, analysis, and improvement of operational quality, efficiency, and effectiveness. Impact on primary components of health care systems: facilities, approaches to care and treatment modalities, and personnel.

Quantitative and qualitative techniques and applications to improve health care systems; performance measures used to evaluate access and quality of care. Impact of healthcare policies, laws, economics, and current US health care culture on organizational performance and patient outcomes.

Prerequisite(s): Junior Standing

Grading: Letter Graded

ISE 161 - Medical Errors Reduction and Patients Safety Engineering

3 unit(s)

Standardization of national reporting of medical errors; patient safety and high risks processes performance analysis; Safety improvements utilizing human factors techniques; information technology applications to reduce medication errors and improve patient safety; structured teams and systems to reduce clinical errors.

Prerequisite(s): Junior Standing

Grading: Letter Graded

ISE 162 - Engineering Statistics and Analysis

2 unit(s)

Topics will include error analysis, probability, statistics including hypothesis testing, confidence limits and control variables, design of experiments and statistical process control as they are utilized in the chemical, materials and process engineering industries.

Lecture 1 hours/Lab 3 hours.

Prerequisite(s): MATH 33A

Grading: Letter Graded

Cross-listed with CHE 162. Chemical Engineering is responsible for scheduling.

ISE 164 - Computer and Human Interaction

3 unit(s)

Introduction to human/computer interaction, paradigms for interaction, human performance capabilities, computer input/output device analysis and design, pattern recognition 3D audio, 3D visualization, application to virtual reality and multimedia.

Prerequisite(s): Junior standing.

Grading: Letter Graded

ISE 167 - System Simulation

3 unit(s)

Introduction to simulation. Monte Carlo techniques. Design and use of discrete-event computer simulation modeling techniques; theoretical and practical treatment of input to models; model validation methods and output analysis. Synchronized sampling, model comparisons.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): CMPE 30 or equivalent; ISE 130 (with grade of "C-" or better). Allowed Declared Majors:

Any Engineering and graduate students.

Grading: Letter Graded

ISE 170 - Operation Research

3 unit(s)

Development and application of mathematical models to industrial problems. Linear programming, network analysis, Markov models, game theory, queuing theory and decision analysis.

Prerequisite(s): ISE 130 (with grade of "C-" or better). Allowed Declared Majors: Any Engineering.

Pre/Corequisite(s): MATH 33LA.

Grading: Letter Graded

ISE 180 - Individual Studies

1-3 unit(s)

Individual work on special topics by arrangement.

Prerequisite(s): Upper division standing and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

ISE 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ISE 194 - Analytics Workshop

1 unit(s)

Application of common analytics programming languages to problems in industrial engineering. A service learning component of 10 hours for the semester is required.

Prerequisite(s): CMPE 30, ISE 135, and Senior Standing.

Grading: Credit/No Credit

ISE 195A - Senior Industrial Engineering Design I

1 unit(s)

Individual or group design projects. Proposal preparation with plans and specifications. Oral and written reports. Professional seminars. global and social issues in engineering.

Misc/Lab: Lab 3 hours.

Prerequisite(s): ISE 105, ISE 120, ENGR 100W, major form on file and good standing in the major.

Grading: Letter Graded

ISE 195B - Senior Industrial Engineering Design II

3 unit(s)

Design of industrial system: Quality function deployment, technology trends, financial analysis, functional specifications, process design, production capability, quality management, manufacturing resource planning, equipment requirements, human resource management, MIS, facility design, and project management. Integrated global and social issues in engineering.

Misc/Lab: Lab 9 hours.

Prerequisite(s): ISE 140 and ISE 195A (with grade of "C" or better). ISE majors only.

Grading: Letter Graded

ISE 200 - Financial Methods for Engineers

3 unit(s)

Systematic approach and methods for engineering decision making where economic outcomes are principal criteria. Accounting analysis and decision making topics that aid in understanding the relationships between various functional areas of business and the decision making processes of engineering managers.

Grading: Letter Graded

ISE 201 - Math Foundations for Decision and Data Sciences

3 unit(s)

Linear algebra and matrix operations in statistics, optimization and artificial intelligence. Statistical concepts and techniques important for decision and data sciences, with motivation by real-world examples. Basic optimization techniques useful for statistics, classification and neural networks.

Prerequisite(s): Graduate Standing in Engineering.

Grading: Letter Graded

ISE 202 - Design and Analysis of Engineering Experiments

3 unit(s)

Review of statistical inference and tests of hypotheses. Introduction to analysis of variance and covariance. Theory and applications of experimental designs for engineering problems. Random and systematic designs. Randomized blocks. Latin squares. Factorial and fractional factorial designs. Taguchi methods.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): ISE 130.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ISE 203 - Agile Systems Engineering

3 unit(s)

Exploration of Lean, Agile, Scrum, Kanban, Large-Scale Scrum, and Scaled Agile Frameworks. Real examples leverage the immersion understanding of Agile. Students acquire Agile knowledge and skills that can be applied to any type of project in any industry.

Prerequisite(s): ISE 213

Grading: Letter Graded

ISE 205 - Data Ethics

3 unit(s)

Data ethics implications of decisions made while conducting and implementing data analysis, ML and AI. Students will learn to identify bias and fairness in a dataset and techniques for reducing the harm.

Prerequisite(s): ISE 130 or instructor's consent.

Grading: Letter graded.

ISE 210 - Human Factors/Ergonomics

3 unit(s)

Analysis and evaluation of work systems in terms of the capabilities and limitations of human participants. Person as a system component. Emphasis is on evaluation of how work affects people and how people affect the work.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

ISE 211 - Experiment Design for Human Factors Engr

3 unit(s)

Hypotheses testing, linear regression, analysis of variance, factorial experiments, fractional factorial designs, Construction/analysis of complete/incomplete block designs, non-parametric statistical methods including alternatives to ANOVA, multiple comparisons, power and sample size determination, and factor analysis.

Prerequisite(s): STAT 115 or ISE 130 or ISE 201 or equivalent (with a grade of B or better)

Grading: Letter Graded

ISE 212 - Human Factors Experiments

3 unit(s)

Research and experimentation on specific aspects of the person as a system or in systems. Particular emphasis is placed on in-depth studies of unique human factors.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): ISE 210 or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ISE 213 - Principles of Engineering Management

3 unit(s)

Functions of engineering managers: planning, organizing, leading, and controlling. Business fundamentals for engineering managers. Engineering leadership and engineering management. Project management methods: planning, scheduling and controlling.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

ISE 214 - Enterprise Engineering

3 unit(s)

The body of knowledge, principles, and disciplines related to the analysis, design, implementation, and operation of all elements associated with an enterprise which is explained through a set of conceptual models and the understanding of an enterprise from engineering perspective.

Prerequisite(s): ISE 213

Grading: Letter Graded

ISE 215 - Usability Evaluation and Testing

3 unit(s)

Seminar is designed to provide students with a comprehensive overview of usability testing methods, as applied to systems products and software-web applications. Course will address testing methods, processes and marketing justification for usability testing.

Prerequisite(s): ISE 210

Grading: Letter Graded

ISE 216 - Service Design: Process and Methods

3 unit(s)

Service Design is a specialization that integrates many aspects of interaction design, organizational psychology, human factors, and systems design. 4 Service Design content areas relevant to employment and ongoing practice in user experience (aka human-computer interaction) will be covered in this course.

Grading: Letter graded.

ISE 217 - Human Computer Interaction

3 unit(s)

Human performance characteristics, computational tools, and HCI applications. How to access/evaluate HCI requirements, to design HCI requirements, to assess the impact of design on performance, and to generalize the design implication to system function.

Grading: Letter Graded.

ISE 218 - Interaction Design I

3 unit(s)

Theory, science and application of user experience interaction design. Latest tools and techniques. Relationship between software interaction design patterns, usability, learnability and human performance in man-machine systems.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

ISE 219 - HCI for Cyber Security

3 unit(s)

The course covers HCI in cyber security that include: authentication and access control, trust, user privacy and data protections, cyber security in social networking, data protection and security in healthcare , cyber security in eCommerce, mobile, computing & cloud computing, compliance and regulation, visualization tools and techniques in cyber security and privacy.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded.

Cross-listed with PSYC 219. Industrial and Systems Engineering is responsible for scheduling.

ISE 220 - Interaction Design II

3 unit(s)

Advanced topics for design of product and service experiences focused on methods that motivate, delight and influence human behavior during engagement with applications and information in multiple media and across devices ranging from wearables to mobile and Web.

Prerequisite(s): ISE 218

Grading: Letter Graded

ISE 222 - Adv Sys Engr

3 unit(s)

Systems engineering and analysis concepts, methodologies, models, and tools needed to understand and implement total life-cycle approach to systems. Model Based Systems Engineering for domain-specific models. System analysis models for economic evaluation, optimization and control. Systems design for reliability, maintainability, usability, producibility, logistics, disposability and sustainability.

Prerequisite(s): ISE 201 or equivalent. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

ISE 223 - Dec Model Sus Dev

3 unit(s)

Planning and decision models for resource management toward achieving economic, environmental, and social objectives in public and private organizations. Key modeling approaches include life cycle assessment, capital project evaluation, multi-criteria decision making under uncertainty, and machine learning. Exploration of business models for service economy, extended producer responsibility, and

sustainable development.

Prerequisite(s): ISE 130 or equivalent

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

ISE 230 - Advanced Operations Research

3 unit(s)

Advanced operations research techniques and topics. Practical consideration in understanding and utilizing operations research methods. Critical analysis of case studies.

Prerequisite(s): ISE 130.

Grading: Letter Graded

ISE 233 - Operational Data Analysis for Industrial Systems

3 unit(s)

Analysis of how data can be used to improve industrial operations. IoT. Data collection, storage, and communication technologies and approaches. Maintenance, operational performance, and quality applications of operational data analysis and machine learning.

Prerequisite(s): ISE 201 and ISE 140 or instructor consent

Grading: Letter Graded

ISE 234 - Electricity Markets & Power Systems Analytics

3 unit(s)

Overview of electricity industry structure and market operations. Applications of analytics methodologies such as Machine Learning and Artificial Intelligence in electric power systems operations using computer programming languages.

Prerequisite(s): Graduate Standing in Engineering.

Grading: Letter Graded

ISE 235 - Quality Assurance and Reliability

3 unit(s)

Selection of adequate variables to monitor a manufacturing/service process; quality improvement through process design, vendor management, customer feedback and product development; use of statistical control charts, the Pareto principle, PDCA, process capability; design for reliability, statistical techniques for analysis of reliability and reliability growth.

Prerequisite(s): ISE 130 (or equivalent). Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

ISE 240 - Analytics for Systems Engineering

3 unit(s)

Application of data analysis, predictive and prescriptive (optimization) modeling techniques to analyze,

model, and optimize real-world industrial and systems engineering problems using computer programming languages.

Prerequisite(s): ISE 170 or equivalent, ISE 130 or equivalent Classified graduate standing or instructor consent

Grading: Letter Graded

ISE 241 - Advanced Operations Planning and Control

3 unit(s)

Design, implementation and evaluation of production and service systems; manufacturing strategy, choice of processes, resources planning, production and procurement control, forecasting methods, scheduling considerations and decision-making techniques.

Prerequisite(s): ISE 140 or instructor consent.

Grading: Letter Graded

ISE 242 - Advanced Service Systems Engineering and Management

3 unit(s)

Strategies, approaches, and quantitative methods to design services, manage operations, and optimize customer service experience. Applies industrial engineering techniques in real-life business situations. Particular emphasis on the case-method and interactive learning.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

ISE 243 - Advanced Supply Chain Analytics

3 unit(s)

Machine Learning and Artificial Intelligence methodologies and their applications in supply chain applications.

Prerequisite(s): ISE 240, ISE 245 or equivalent.

Grading: Letter Graded

ISE 244 - AI Tools and Practice for Systems Engineering

3 unit(s)

Artificial Intelligence software tools useful for industrial and systems engineering. Emphasis on clear understanding of the mathematics behind them, what tools to use in which conditions, and how to interpret and use the results.

Prerequisite(s): ISE 201 (or equivalent); or instructor consent.

Grading: Letter Graded

ISE 245 - Advanced Supply Chain Engineering

3 unit(s)

Supply chain concepts, strategies; emphasis on analytical tools to solve supply chain problems. Fundamentals of supply chain modeling of inventory, transportation, location, facility planning problems.

Information sharing, risk pooling. Mechanisms for increasing profits.

Prerequisite(s): ISE 140.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

ISE 247 - Logistics for Supply Chain

3 unit(s)

An exploration of logistics for entire supply chain system from inbound movement through material management to physical distribution to customers. Topics include: packaging and handling, material management, transportation and traffic management, facility location and global logistics.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

ISE 250 - Leading the Six Sigma Improvement Project

3 unit(s)

Improvement projects are critical. Covers Six Sigma methodology, problem-solving tools to improve cost, quality, time and variability. Management of projects, teams, change, and benchmarking; root cause problem solving, and implementation effectiveness. Practical experience through course project.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

ISE 251 - Managing the Lean Enterprise Improvement Program

3 unit(s)

The elements of an effective organizational improvement program composed of multiple projects. Covers capabilities-based strategy; dimensions of performance such as cost, quality and time; when to use Six Sigma, Lean, Theory of Constraints and Reengineering.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ISE 260 - Healthcare Delivery Systems

3 unit(s)

Overview and analysis of health care delivery systems in the US with emphasis on the assessment, analysis, and improvement of operational quality, efficiency, and effectiveness. Impact on primary components of health care systems: facilities, approaches to care and treatment modalities, and personnel. Quantitative and qualitative techniques and applications to improve health care systems; performance measures used to evaluate access and quality of care. Impact of healthcare policies, laws, economics, and

current US health care culture on organizational performance and patient outcomes

Prerequisite(s): Graduate Standing

Grading: Letter Graded

ISE 261 - Medical Errors Reduction and Patients Safety Engineering

3 unit(s)

Standardization of national reporting of medical errors; patient safety and high risks processes performance analysis; Safety improvements utilizing human factors techniques; information technology applications to reduce medication errors and improve patient safety; structured teams and systems to reduce clinical errors.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

ISE 265 - Advanced System Simulation

3 unit(s)

Use of computerized simulation and modeling techniques to conduct experiments, evaluate the costs of a process, evaluate alternative inspection policies and determine effects of JIT management models for shop setting.

Prerequisite(s): ISE 167 or instructor consent.

Grading: Letter Graded

ISE 270 - Information Engineering

3 unit(s)

Technologies, strategies and systems for planning, analyzing, designing and implementing data resources in order to ensure and continuously improve processes in the enterprise; object-oriented development, Computer-Aided Software/Systems Engineering (CASE); information superhighway, client/server computing and distributed database management systems.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): CMPE 30 or instructor consent. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Cross-listed with CMPE 270. Industrial and Systems Engineering is responsible for scheduling.

ISE 290 - Human Factors & Ergonomics Professional Seminar

2 unit(s)

Real world skills necessary to start your professional HR/Ergo career, i.e. public presentation, terminology, field evaluations, current research and industry issues in human factors and ergonomics.

Prerequisite(s): Graduate standing.

Grading: Credit/No Credit

ISE 292 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ISE 295C - Graduate Curricular Practical Training

1 unit(s)

Fieldwork for Industrial and Systems Engineering graduate students. A report is required at the end of the semester addressing goals set at the start of the assignment.

Course may be repeated for credit up to 3 units.

Prerequisite(s): Students must be master's level Industrial and Systems Engineering majors or Engineering Management majors or Human Factors Engineering, in good standing, classified (no conditionally classified students), and completed at least one semester of master's level work at SJSU. Students must comply with all federal eligibility requirements for CPT.

Grading: Credit/No Credit.

ISE 297 - Special Topics in Industrial Engineering

1-4 unit(s)

Special topics to augment regularly-scheduled courses.

Prerequisite(s): Graduate standing in industrial engineering.

Grading: Letter Graded

ISE 298 - Special Problems

1-4 unit(s)

Advanced individual work in industrial engineering. Repeatable for up to 18 units when project changes.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

ISE 299 - Master's Thesis

1-4 unit(s)

Repeatable: Repeatable for credit.

Prerequisite(s): Consent of thesis advisor. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

ISE 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a thesis or project class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Industrial Design

DSID 21 - Visualization I

3 unit(s)

Presenting design concepts in both preliminary and finished states. Appraisal and application of media used in industry. Includes elements of color theory.

Prerequisite(s): Declared BA Design Studies or BS Industrial Design Major

Corequisite(s): DSID 31

Grading: Letter Graded

DSID 22 - Visualization II

3 unit(s)

Sketching techniques commonly used by designers for communicating their concepts.

Prerequisite(s): DSID 21, BA Design Studies or BS Industrial Design majors only.

Corequisite(s): DSID 32

Grading: Letter Graded

DSID 31 - Industrial Design Foundation I

3 unit(s)

Practical exploration of the basics of industrial design aesthetics. Introduction to the design process with special emphasis on 3D form development and presentation.

Prerequisite(s): Declared BS Industrial Design or BA Design Studies Major

Corequisite(s): DSID 21.

Grading: Letter Graded

DSID 32 - Industrial Design Foundation II

3 unit(s)

Development and application of basic industrial design skills, methodology and aesthetics to elementary

product design. Project assignments leading from abstract exercises to actual product design.

Prerequisite(s): DSID 31; BA Design Studies or BS Industrial Design Majors Only

Corequisite(s): DSID 22

Grading: Letter Graded

DSID 32A - ID Portfolio Project I

1 unit(s)

ID portfolio project class combines 2D and 3D skills from previous ID classes, in the first complete product design application. Complete presentation for ID faculty review required.

Misc/Lab: Activity 2 hours

Course may be repeated for credit for up to 2 units.

Prerequisite(s): DSID 21, DSID 31; BA Design Studies and BS Industrial Design Majors only.

Corequisite(s): DSID 22, DSID 32

Grading: Letter Graded

DSID 41 - Materials and Processes I

3 unit(s)

Introduction to materials and manufacturing processes as they relate to product development and the Industrial Design profession.

Misc/Lab: Activity 6 hours.

Prerequisite(s): DSID 22, DSID 32; BS Industrial Design majors only; BA Design Studies majors with department consent.

Grading: Letter Graded

DSID 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 6 units.

Grading: Mixed Grading

DSID 121 - Industrial Design Process

3 unit(s)

Explores how a conscious and rational approach can enhance creativity. Techniques used include goal setting, brainstorming, time-management, evaluation matrices and journal keeping.

Prerequisite(s): DSID 125A, BS Industrial Design or HFS Graduate Majors Only, or Instructor consent
Grading: Letter Graded

DSID 122 - Cont. & Crit. Studies: Industrial Design

3 unit(s)

This course thematically offers readings in Industrial Design theory, considers specific applications intended to highlight problems in contemporary practice, and is divided into five modules. Course content and examples will be selected to complement the studio projects in the program.

Lecture 3 hours/Lab 1 hour.

Prerequisite(s): DSGN 100W; BA Design Studies or BS Industrial Design Majors Only.
Grading: Letter Graded.

DSID 123 - Intermediate Industrial Design

3 unit(s)

Design theories, methods and presentation techniques used by product designers in small scale product design. Stress application of knowledge of ergonomics, industrial materials and manufacturing processes.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): DSID 32A. BS Industrial Design Majors only
Grading: Letter Graded

DSID 123A - ID Portfolio Project 2

3 unit(s)

Professional practice expectations within the field of industrial design and creation of a professional level design portfolio.

Prerequisite(s): DSID 32A, BS Industrial Design majors only.
Grading: Credit/No Credit

DSID 124 - Design for All

3 unit(s)

Designing for as broad a percentage of the population as possible. Course focuses on accessible design despite physical, cognitive and/or socioeconomic obstacles. Course is repeatable for a total of 6 units.

Misc/Lab: Activity 6 hours.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): DSID 32A (Credit), BS Industrial Design Majors Only or Instructor Consent.
Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

DSID 125 - Advanced Industrial Design

3 unit(s)

Advanced exploration of industrial design theory and practice with projects involving high levels of complexity of technological, functional and aesthetic constraints.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): DSID 123A. BS Industrial Design Majors only

Grading: Letter Graded

DSID 125A - ID Portfolio Project 3

2 unit(s)

Development of design competition entry and cohesive portfolio using work created in prior and concurrent DSID courses by integrating advanced computer graphics and technology knowledge. Comprehensive presentation to ID faculty and invited professionals required.

Prerequisite(s): DSID 123A. BS Industrial Design Majors only

Grading: Credit/No Credit

DSID 126 - Ergonomics for Design

3 unit(s)

Aspects of products affecting human performance, comfort and safety. Emphasis on design of computer interfaces, automobiles and furniture. Topics include visual displays, anthropometry, seating design and safety design.

Activity 6 hours.

Prerequisite(s): BS Industrial Design Majors must complete DSID 22 and DSID 32. Interaction Design Minors must complete ANI 11 or DSID 22 or DSIT 10, and DSID 32 or DSGD 83.

Grading: Letter Graded

DSID 128 - Advanced Projects in Industrial Design

3 unit(s)

Comprehensive, in-depth analysis and design of faculty-assigned projects as well as a student-proposed project. Student-proposed projects must meet with the approval of the Industrial Design faculty.

Lab 6 hours.

Course may be repeated for credit.

Prerequisite(s): DSID 125A, BS Industrial Design majors only.

Grading: Letter Graded

DSID 128A - ID Portfolio Project 4

1 unit(s)

Integration of business and advanced technologies into the special graduating project. Final show and

presentation for ID faculty and invited professionals required.

Misc/Lab: Activity 2 hours.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): DSID 125A, DSID 128, DSGN 127; BS Industrial Design Majors Only.

Grading: Credit/No Credit

DSID 129 - Visualization III

3 unit(s)

Principles of computer graphics, computer-aided technology and applications in industrial design. Emphasis on the transition from 2D applications to 3D applications.

Misc/Lab: Lab 6 hours.

Prerequisite(s): DSID 22, DSID 32; BS Industrial Design Majors only; BA Design Studies with Department consent.

Grading: Letter Graded

DSID 130 - Sustainable Design

3 unit(s)

Design products with a focus on minimizing their impact on the environment. The entire lifespan of designed and manufactured products will be explored. Course is repeatable for credit for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): DSID 32A (Credit); BS Industrial Design Majors only, or Instructor Consent

Grading: Letter Graded

Note(s): Offered only occasionally.

Sustainability Focused - SDG 12: Responsible Consumption and Production

DSID 131 - Interaction Design

3 unit(s)

Advanced practical applications of interaction design theory, with an emphasis on strategies for software products including aspects of both UX (user-experience) and UI (user-interface) design.

Activity 6 hours.

Course is repeatable for up to 6 units.

Prerequisite(s): DSID 126.

Grading: Letter Graded

DSID 132 - Softgoods

3 unit(s)

Design of products that incorporate soft materials and textiles in their construction. Products include furniture, clothing, shoes, and other products that contribute to current lifestyles.

Lab 6 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): DSID 123A; BS Industrial Design majors only.

Grading: Letter Graded

DSID 133 - Design Projects: Making It

3 unit(s)

Students gain experience using experimental or exploratory design and fabrication techniques or technologies to develop a design project.

Activity 6 hours.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): DSID 123A; BS Industrial Design majors only.

Grading: Letter Graded

DSID 134 - Design and Meaning

3 unit(s)

This course will focus on the formal properties of products to better understand how design addresses and projects meaning as it relates to designed and manufactured objects. Coursework will explore this via experiments in specification and fabrication.

Prerequisite(s): DSID 32A; BS Industrial Design Majors Only

Grading: Letter Graded

DSID 135 - Design, Entrepreneurship, Intellectual Property and Professional Practice

3 unit(s)

Strategies for entering the profession as a business owner or design entrepreneur. Course includes the exploration of past and future business models as well as issues of intellectual property protection.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): DSID 123A or Instructor Permission.

Grading: Letter Graded

DSID 136 - Advanced Digital Workshop

3 unit(s)

Advanced Digital modeling and prototyping tools for Industrial Design.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): DSID 129; BA Design Studies or BS Industrial Design Majors only, or Instructor Consent

Grading: Letter Graded

DSID 137 - Advanced Physical Prototyping

3 unit(s)

Advanced prototyping techniques for Industrial Design, including patternmaking, sewing, and casting.

Activity 6 hours.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): DSID 32, BA Design Studies or BS Industrial Design majors only.

Grading: Letter Graded

DSID 143 - Advanced Materials, Process & Technology

3 unit(s)

Advanced Materials, Processes and Technology will enhance themes covered in Materials and Processes coursework with the addition of study of the relevance and implications of advanced materials and technologies on designed artifacts.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): DSID 32, DSID 41; BA Design Studies or BS Industrial Design Majors only, or instructor consent.

Grading: Letter Graded

DSID 144 - Design for Healthcare

3 unit(s)

Introduction to unique theories and challenges associated with the design of objects, experiences and services related to healthcare. Focuses on the application of patient-centered design theories for the betterment of patient experiences and patient-provider relationships.

Misc/Lab: Activity 6 hours.

Prerequisite(s): DSID 123 or instructor consent

Grading: Letter Graded

DSID 192 - International Program Studies

1-14 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

DSID 226 - Ergonomics for Design

3 unit(s)

Aspects of products affecting human performance, comfort and safety. Emphasis on design of computer interfaces, automobiles and furniture. Topics include visual displays, anthropometry, seating design, and safety design.

Prerequisite(s): Graduate status in Human Factors/Ergonomics (HFE) or instructor consent.

Grading: Letter Graded

Informatics

INFM 200 - Informatics: Fundamentals

3 unit(s)

A broad perspective and understanding of informatics as a technical skill set that focuses on user-centered systems and balances legal and ethical considerations and measures. Examines informatics applications in specific and interprofessional contexts.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

INFM 201 - Informatics: Technology Foundations

2 unit(s)

Introduction to computing fundamentals with an emphasis on understanding desktop and network computing, web framework architectures, and basic coding.

Grading: Letter Graded

INFM 202 - Informatics: Security Overview

1 unit(s)

Fundamentals of network security, compliance and operational security; threats and vulnerabilities; application, data, and host security; access control and identity management; and cryptography. Students are provided with an opportunity to gain hands-on experience using typical cybersecurity solutions.

Grading: Letter Graded

INFM 203 - Big Data Analytics and Management

2 unit(s)

Overview and use of important big data technologies, trends, infrastructure, and management issues that enable users to make informed and strategic decisions with the presence of large-scale data sets.

Grading: Letter Graded

INFM 204 - Human Centered Design

2 unit(s)

Designing and developing user-centered knowledge structures for the Web environment. Core topics are: problems addressed by effective human-computer interaction; how to design for findability; design thinking concepts and tools; prototyping; and informing stakeholders about a content-rich product.

Grading: Letter Graded

INFM 205 - Informatics: Project Management

2 unit(s)

Introduces essential strategies and techniques for project management. Topics include: management styles, institutional constraints, project life cycles, stakeholder management, scope definition, risk assessment, project planning tools, and team management.

Grading: Letter Graded

INFM 206 - Electronic Records: Foundations

3 unit(s)

Principles and methods of managing records and information as operational, legal and historical evidence in electronic environments. Examines the ways in which new information technologies challenge organizations' capacities to define, identify, control, manage, and preserve electronic records and information.

Grading: Letter Graded

INFM 207 - DAM: Digital Assets Management

2 unit(s)

Concepts, terminology, practice and application of DAM in the private and public sector. Addresses metadata, workflow, taxonomy, data security, governance, and preservation of digital assets.

Grading: Letter Graded

INFM 208 - Information Security: Info Assurance

1 unit(s)

Overview of Information Assurance and Risk Management theories, principles, and techniques. This course examines the information assurance frameworks and risk management planning structures used to ensure that an organization's information resources and assets are protected.

Grading: Letter Graded

INFM 210 - Health Informatics

3 unit(s)

Health data and standards, electronic health records (EHR) and other healthcare information, data management concerns and technology governance in the health care environment.

Grading: Letter Graded

INFM 211 - Informatics Culminating Project

3 unit(s)

All Informatics students are required to complete a culminating project for the MS in Informatics degree program. The culminating project demonstrates mastery through the application of knowledge and skills developed in the Informatics program. Students select from two options: (1) an Organizational Consulting Project with a real-world partner to address a specific Informatics-related problem; or, (2) a personal e-Portfolio that presents a program-based assessment of all program learning outcomes (core competencies) learned during the MS in Informatics degree program.

Grading: Mandatory Credit/No Credit/RP

INFM 213 - Epidemiological Methods

3 unit(s)

Introduction to the principles and methods of epidemiologic research. Students are enabled to design, conduct, analyze, and interpret epidemiologic research.

Grading: Letter Graded

INFM 214 - Health Data and Analytics

3 unit(s)

Exploration of healthcare informatics and its relation to health information technology. Students will apply basic knowledge and skills from healthcare data mining, data science, data management and professional project management to address practical healthcare business and clinical intelligence issues.

Grading: Letter Graded

INFM 215 - Network Security

3 unit(s)

Technical and administrative aspects of information security and assurance. Includes compliance and operational security, Web application attacks, penetration testing, data loss prevention, cloud computing security, psychological and behavioral traits of users vulnerable to cyber and social engineering attacks, and application programming development security.

Prerequisite(s): Graduate Standing or Instructor Consent

Grading: Letter Graded

INFM 216 - Computer Digital Forensics

3 unit(s)

Digital forensic investigation activities. Data acquisition, forensic imaging, use of Forensic Tool Kit (FTK) suite of applications (using Access Data virtual labs), locking mechanisms, search and seizure procedures,

and report writing.

Prerequisite(s): Graduate Standing or Instructor Consent

Grading: Letter Graded

INFM 217 - Tools Lab

3 unit(s)

Security tools used to detect network security threats and vulnerabilities at a microscopic level. Introduction to penetration testing, packet analyzers, standards and cryptography, reconnaissance and malware, hacking, and vulnerability scanning.

Prerequisite(s): Graduate Standing or Instructor Consent

Grading: Letter Graded

INFM 284 - Seminar in Informatics

1-3 unit(s)

Special topics seminar on emerging trends in Informatics. Examples of topics: Artificial Intelligence, Data Aggregation/Analytics, eSports, Health Dashboards & Data Streams, Health Public Policy, Information Ethics, Machine Learning and Race/Gender for Informatics.

Repeatable with different content for up to 9 units.

Grading: Letter Graded

ISDA 20A - Query Languages

1 unit(s)

Introduction to the features and functionalities of structured query language (SQL) focusing on manipulating data in a database, creating tables and indexes, modifying stored records, creating database objects

Grading: Letter Graded.

Note(s): Should be taken before junior year or before admission for transfer students.

ISDA 20B - Python Programming

2 unit(s)

Hands-on introduction to Python focusing on solving a problem by developing flowcharts and algorithms, building a Python application using Python I/O (input/output), variables and data types, conditionals, and loops, Python packages and integrated development environment (IDE).

Grading: Letter Graded.

Note(s): Should be taken before junior year or before admission for transfer students.

ISDA 20C - Web Development

1 unit(s)

The structure and functionality of the world wide web and modular web design techniques. Covers HTML5,

CSS, and JavaScript. Topics also include cultural issues in website designing, and accessible and responsive web design.

Grading: Letter Graded.

Note(s): Should be taken before junior year or before admission for transfer students.

ISDA 20D - Computer Operating Systems

1 unit(s)

Overview of the design and implementation of computer operating systems (OS) with emphasis on the three major subsystems: process management (processes, threads, CPU scheduling, synchronization, and deadlock), memory management (segmentation, paging, swapping), and file systems; and distributed systems.

Grading: Letter Graded.

Note(s): Should be taken before junior year or before admission for transfer students.

ISDA 100 - Technical Writing for Information

3 unit(s)

Introduces students to the principles of effective communication for technical, scientific, and business environments. Students will create written work in a variety of standard formats and use appropriate style to address the needs of targeted audiences.

Prerequisite(s): LLD 100WB.

Grading: Letter Graded.

ISDA 101 - Online Learning: Tools and Strategies for Success

1 unit(s)

Introduces students to a variety of successful strategies in the use of new and emerging technologies found in today's online learning environment. Covers learning management tools, web conferencing, social software, university resources, skills for success in an online environment.

Grading: Credit/No Credit/RP.

Note(s): Must be taken before or in the first semester of junior year; if unsuccessful must be retaken next semester; if failed a second time, student will be dismissed from the program.

ISDA 110 - Technology, Culture, and Society

3 unit(s)

Navigating the social, political, legal and ethical issues in data processing and use. Topics: social and political factors that interact with data mining, visualization and analytics, explainable AI and FATE (Fairness, Accountability, Transparency, and Ethics).

Corequisite(s): ISDA 101.

Grading: Letter Graded.

Note(s): Should be taken in first semester of junior year.

ISDA 111 - Information and Data Science

3 unit(s)

Conceptual foundations and theoretical underpinnings pertaining to the social, political, and economic factors associated with the information society. Definition of information and information science; constructing information individually and collectively; and emerging information and communications technologies. Concepts, techniques, and tools needed to accomplish various facets of data science practice, including data collection and integration, management, analysis, modeling, and visualization. Data science skills such as product creation, communication, evaluation, presentation, and storytelling.

Prerequisite(s): ISDA 20A, ISDA 20B, and GE Area B4 (STAT 95 preferred).

Grading: Letter Graded.

Note(s): Should be taken in first semester of junior year.

ISDA 120 - Information Security

3 unit(s)

Compliance and operational security, psychological approaches to social engineering attacks, Web application attacks, penetration testing, data loss prevention, cloud computing security, application programming development security, firewalls and intrusion detection systems.

Prerequisite(s): ISDA 20C, ISDA 20D, and ISDA 111.

Grading: Letter Graded.

ISDA 121 - Human Centered Cybersecurity

3 unit(s)

Overview of human interactions with cybersecurity technology. How people react to cybersecurity policies and tools, reasons for behavior, development and evaluation of tools for assisting people in cybersecurity, human factors involved with social engineering attacks and phishing; ethical hacking.

Prerequisite(s): ISDA 20C and ISDA 20D.

Grading: Letter Graded.

ISDA 122 - Privacy, Security, Ethics

2 unit(s)

Data ethics and security will be assessed in terms of privacy, data manipulation, data sharing and ownership, and conflict of interest. Through case studies students will explore real world situations involving interplay between data security, privacy, and ethics.

Prerequisite(s): ISDA 120 or ISDA 121.

Grading: Letter Graded.

ISDA 123 - Information Assurance

2 unit(s)

Focus on information assurance frameworks from both technical and social perspectives. Confidentiality, integrity, and availability, security policies, authentication, data protection and access control, risk management, threat and vulnerability assessment, common attack/defense methods, ethical issues.

Pre/Corequisite(s): ISDA 122

Grading: Letter Graded.

ISDA 130 - User Centered Interface Architecture

3 unit(s)

Focus on approaches to involve the user at different stages of interface design for web- and mobile- environments. Students learn, apply, and evaluate various user interface architectures, modes of interaction, and prototyping, testing, and evaluation techniques.

Prerequisite(s): ISDA 20C, ISDA 20D, and ISDA 111.

Grading: Letter Graded.

ISDA 131 - Information Architecture

3 unit(s)

Project based course developing user-centered knowledge structures for web environments. Core topics are problems addressed by effective IA; designing for findability; user research; best practices; methods for organizing, labeling, and structuring navigation systems; creating client documents and deliverables.

Prerequisite(s): ISDA 130.

Grading: Letter Graded.

ISDA 140 - Big Data Analytics and Management

3 unit(s)

Big data technologies and trends including large-scale databases, map-reduce paradigm, big data mining, and big data platforms. Focus is on hands-on learning with tools such as Splunk and Scala/Hadoop using as applied to real-world data sets.

Prerequisite(s): ISDA 111.

Grading: Letter Graded.

ISDA 141 - Information Visualization

3 unit(s)

Background of information visualization; perceptual and design principles of information visualization; data analysis methods and hands-on applications of visualization techniques as applied to structured and unstructured data; interaction and interface design issues; social visualization and visual analytics.

Prerequisite(s): ISDA 140

Grading: Letter Graded.

ISDA 150 - Topics in Information Science and Data Analytics

1-9 unit(s)

Current and emerging issues, practices, and technologies relevant to Information and Data Science professionals. Topics, which differ each semester, may include: "Hands-on Working with Big Data," "Artificial Intelligence," "Conversational Search Systems," "eSports," "Machine Learning," and "Explainable AI."

Repeatable for up to 9 units when content changes.

Prerequisite(s): Upper Division Standing.

Grading: Letter graded.

Note(s): Topics and prerequisites will vary by semester; may be taken a maximum of 3 times with different topics.

ISDA 160 - User Experience (UX) Research and Design

3 unit(s)

An overview of the concepts, principles, and methods of user experience (UX) research and user-centered design with a focus on inclusivity and equity. Students will design and implement UX studies, analyze results, and document and communicate findings and recommendations.

Grading: Letter Graded.

ISDA 170 - The Emerging Future: Technology Issues and Trends

4 unit(s)

In this capstone course students gain skills to plan strategically for the changing technological landscape. Students participate in forecasting activities through readings, video presentations, guest lectures, introductions to today's futurists, and individual research.

Grading: Letter Graded.

Note(s): Should be taken during last semester of study.

MARA 287 - Developing an Information Governance Strategy

3 unit(s)

Covers the major components of an Information Governance framework - policies, processes, compliance, and audits. The Information Governance Reference Model is used to analyze the stakeholders, standards, processes, technologies, methods, and tools required to develop an effective information governance strategy.

Prerequisite(s): MARA 200 and MARA 204 for all MARA students. These prerequisites are waived for non-MARA majors.

Grading: Letter Graded

Information

INFO 200 - Information Communities

3 unit(s)

Examines information users and the social, cultural, economic, technological, and political forces that shape their information access and use.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Demonstrated computer literacy.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

INFO 202 - Information Retrieval System Design

3 unit(s)

The systems and knowledge structures that information professionals create and use to connect users with information.

Prerequisite(s): Demonstrated computer literacy.

Grading: Letter Graded

INFO 203 - Online Learning: Tools and Strategies

1 unit(s)

This course introduces students to new and emerging technologies used in today's online learning environment. It covers learning management tools, various social networking platforms, web conferencing, as well as strategies and skills needed for success in online learning.

Grading: Credit/No Credit

INFO 204 - Information Professions

3 unit(s)

Examines the organizations and environments in which information professionals work.

Prerequisite(s): Demonstrated computer literacy.

Grading: Letter Graded

INFO 208 - Big Data Technologies

3 unit(s)

Introduction to the technological ecosystem of Big Data and Hadoop as well as the goals and work of Data Science.

Prerequisite(s): Graduate Standing or instructor consent

Grading: Letter Graded

INFO 210 - Reference and Information Services

1-3 unit(s)

Process-oriented examination of how information professionals answer reference questions. Stresses interpersonal skills required for effective question negotiation and sources with which questions are

answered.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): INFO 202.

Grading: Letter Graded

INFO 215 - Information Visualization

3 unit(s)

Applying perceptual and cognitive principles to the design and development of information visualization techniques, such as scatterplots, treemaps, parallel coordinates, and GIS visualizations; interactive visualization interface design and implementation; narrative visualization and storytelling; visual analytics for decision making.

Prerequisite(s): Graduate Standing or Instructor Consent

Grading: Letter Graded

INFO 220 - Resources and Information Services in Professions and Disciplines

1-3 unit(s)

Examination of the nature of resources for, and services to, professions and disciplines. Possible disciplines for study may be law, business and economics, life and/or physical sciences, medical sciences, engineering and computer science, maps, and visual and performing arts.

Course may be repeated for credit for up to 9 units when content changes.

Prerequisite(s):

For Business: INFO 202, INFO 204, INFO 210.

For Science/Technology: INFO 210.

For Visual and Performing Arts: INFO 210.

Grading: Letter Graded

INFO 221 - Government Information Sources

3 unit(s)

Study in government publications and databases, their bibliographic organization, use in all types of libraries and information centers, methods of acquiring information from federal, state and local sources; problems of depository and non-depository collections.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): INFO 210.

Grading: Letter Graded

INFO 230 - Issues in Academic Libraries

3 unit(s)

Investigate current issues that impact the functioning of the academic library. Topics include issues related to social and political environments, clientele, services, collections, physical settings, financing, staffing and

future trends in the academic library sector.

Prerequisite(s): INFO 200, INFO 202 and INFO 204.

Grading: Letter Graded

INFO 231 - Issues in Special Libraries and Information Centers

3 unit(s)

This course will investigate current issues that impact the functioning of special libraries/information centers. Topics covered will include issues related to social and political environments, clientele, services, collections, physical settings, financing and staffing, and future trends in the special library/information center sector.

Prerequisite(s): INFO 200, INFO 202, INFO 204.

Grading: Letter Graded

INFO 232 - Issues in Public Libraries

3 unit(s)

This course will investigate current issues that impact the functioning of the public library. Topics covered will include issues related to social and political environments, clientele, services, collections, physical settings, financing and staffing, and future trends in the public library sector.

Prerequisite(s): INFO 200, INFO 202, INFO 204.

Grading: Letter Graded

INFO 233 - School Library Media Centers

3 unit(s)

The role of the school library media teacher and the school library media program in the educational community. Emphasis on creation of effective learning environments, involvement in the curriculum and teaching process as well as philosophies of service and management.

Prerequisite(s): INFO 204 and INFO 250.

Grading: Letter Graded

INFO 234 - Intellectual Freedom Seminar

3 unit(s)

Focuses on current intellectual freedom issues and the centrality of intellectual freedom to librarianship.

Prerequisite(s): INFO 200, INFO 204.

Grading: Letter Graded

INFO 237 - School Library Media Materials

3 unit(s)

Survey of materials in a variety of formats that meet the needs of K12 students. Materials will be examined that support state and national curriculum standards as well as material that support independent reading and learning.

Course may be repeated for credit one time for up to 3 units.

Prerequisite(s): INFO 200, INFO 202, INFO 203, and INFO 204.

Grading: Letter Graded

INFO 240 - Information Technology Tools and Applications

3 unit(s)

Focuses on building practical skills in a variety of networked computer applications. Topics will vary, but will typically include web coding languages and designing web sites.

Prerequisite(s): INFO 202.

Grading: Letter Graded

INFO 241 - Automated Library Systems

1-3 unit(s)

Review of major systems for library automation. Problems associated with the planning, implementation and use of the systems, negotiation of systems acquisition and trends in the field.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): INFO 200, INFO 202 and INFO 204. Not available to Open University Students.

Grading: Letter Graded

INFO 242 - Database Design and Management

3 unit(s)

Design and implementation of relational databases. Learn about database management systems (such as Oracle), database administration, and database querying with SQL.

Prerequisite(s): INFO 202. Not available to Open University Students.

Grading: Letter Graded

INFO 244 - Online Searching

3 unit(s)

Techniques and concepts for searching online, including strategies, database content, search options, and understanding the information environment. The course includes extensive hands-on experience with subscription search engines.

Prerequisite(s): INFO 202.

Grading: Letter Graded

INFO 246 - Information Technology Tools and Applications - Advanced

1-3 unit(s)

Designing advanced Web applications using technology such as dynamic HTML and XML and Web programming languages such as XSLT, JavaScript, JSP, Perl, PHP, MYSQL, and ASP. May be repeated for up to 12 units when content changes.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): INFO 202.

Grading: Letter Graded

INFO 247 - Vocabulary Design

3 unit(s)

Survey of principles and practices used to index information-bearing objects such as documents or images. Includes term assignment, review of existing vocabularies, thesaurus design, metadata structures and automatic and natural language processes.

Prerequisite(s): INFO 202.

Grading: Letter Graded

INFO 248 - Beginning Cataloging and Classification

3 unit(s)

Theory and practice of bibliographic control including the study of descriptive cataloging standards (RDA with reference to AACR2), online cataloging using MARC format and other standards, and subject representation using Library of Congress Subject Headings (LCSH), Dewey Decimal Classification (DDC), and Library of Congress Classification (LCC).

Prerequisite(s): INFO 202.

Grading: Letter Graded

INFO 250 - Design and Implementation of Instructional Strategies for Information Professionals

3 unit(s)

Examination of concepts of instruction in the use of information technologies, information services and sources. Includes investigation of learning theory and instructional design. Emphasis on application of theory through development of instruction and instructional resources in various media for use in a broad array of institutional environments.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): INFO 200. Not available to Open University Students.

Grading: Letter Graded

INFO 251 - Web Usability

3 unit(s)

Through examination of theory, methodologies, and real-life cases, Info 251 offers a user experience (UX) framework for developing information systems. Students learn the principles of user-centric design and style for particular circumstances and populations.

Prerequisite(s): INFO 202.

Grading: Letter Graded

INFO 254 - Information Literacy and Learning

3 unit(s)

Provides theory and practice for teaching information literacy in an LIS setting. The course emphasizes learning theory as well as the practical aspects of teaching. Students learn methods and tools for teaching in both synchronous and asynchronous settings.

Prerequisite(s): INFO 200

Grading: Letter Graded

INFO 256 - Archives and Manuscripts

3 unit(s)

An introduction to the theory and practice of managing archival documents, such as personal papers, institutional records, photographs, electronic records and other unpublished material. Topics covered include manuscript and records acquisition and appraisal, arrangement and description, conservation and preservation, reference and access.

Prerequisite(s): INFO 200, INFO 202, INFO 204.

Grading: Letter Graded

INFO 259 - Preservation Management

3 unit(s)

An introduction to the philosophies and techniques used to preserve manuscript, printed and digital materials. Examination of the evolution of preservation practice, with emphasis on emerging theories, models and technologies in digital preservation.

Prerequisite(s): INFO 200, INFO 202, INFO 204.

Grading: Letter Graded

INFO 260A - Programming and Services for Children Ages 0-8

3 unit(s)

This course examines the importance of programming for children, including parent education programs, story hours, outreach techniques, services with schools, summer reading programs, and program series such as weekly or monthly programs on manga, knitting, book discussions, or homework help.

Prerequisite(s): INFO 200

Grading: Letter Graded

INFO 261A - Programming and Services for Young Adults Ages 9-18

3 unit(s)

Administration and delivery of professional library and information services with multi-cultural young adult populations: features critical youth studies cultural/historical research, resources, policy, threats, tools, methods, service philosophies and management skills necessary for a comprehensive profile of YA library services.

Prerequisite(s): INFO 200

Grading: Letter Graded

INFO 263 - Materials for Children

3 unit(s)

Survey of materials in a variety of formats including nonfiction, beginning chapter books, fictional genres, paperback series and electronic resources, and how they can help meet developmental needs. Collection development tools and techniques for this material will also be included.

Prerequisite(s): INFO 200, and either INFO 260A or INFO 261A

Grading: Letter Graded

INFO 265 - Materials for Young Adults Ages

3 unit(s)

This course will allow students to take an in depth look at materials in a variety of formats for teens, including fiction, popular nonfiction, graphic novels, movies, computer games, websites, other media, and determine how they can meet developmental needs.

Prerequisite(s): INFO 200, and either INFO 260A or INFO 261A

Grading: Letter Graded

INFO 266 - Collection Management

3 unit(s)

Study of collection management in all types of libraries and information centers. Includes analysis of information needs, criteria for selection, collection use evaluation and resources for collection development.

Prerequisite(s): INFO 202, INFO 204.

Grading: Letter Graded

INFO 267 - Services to Youth

1-9 unit(s)

Seminar in planning, developing and evaluating youth services in public libraries. Special needs of children and young adults in the public library, liaison with schools, reference services, and collection planning will be featured.

Course may be repeated for credit for up to 9 units when content changes.

Prerequisite(s): INFO 200, and either INFO 260A or INFO 261A

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

INFO 268 - History of Youth Literature

3 unit(s)

The history of literature for children and teens from its earliest examples to today's current trends, including how childhood has changed over the years, the influence of culture on those changes, and on the materials created for children and teens.

Prerequisite(s): INFO 200

Grading: Letter Graded

INFO 269 - Early Childhood Literacy

3 unit(s)

Covers a wide variety of topics important for an understanding of early childhood multi-literacies in library and non-library environments, including current research, best practices and practical examples that can be implemented in various work environments with children.

Prerequisite(s): INFO 200

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

INFO 271A - Genres and Topics in Youth Literature

1-9 unit(s)

Various topics and genres in literature for children or teens will be examined in depth, such as graphic novels, poetry, fantasy, science fiction, publishing and writing trends, reading motivation techniques, literature in the classroom, and the art of picture books. Repeatable for up to 9 units.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): INFO 200, and either INFO 260A or INFO 261A

Grading: Letter Graded

INFO 275 - Library Services for Racially and Ethnically Diverse Communities

3 unit(s)

This course focuses on developing skills for planning, implementing and evaluating programs for addressing the information needs of racially, ethnically and linguistically diverse communities. Reviews the major national, state and local studies.

Prerequisite(s): INFO 200 and INFO 204. Not available to Open University Students.

Grading: Letter Graded

INFO 280 - History of Books and Libraries

3 unit(s)

This class traces the development of the book through its many stages and explores how the creation, use, and storage of information are affected by social and technological change. The development of libraries and librarianship and how they have accommodated themselves to the changing form of the book will also be considered.

Prerequisite(s): INFO 200

Grading: Letter Graded

INFO 281 - Seminar in Contemporary Issues

1-3 unit(s)

Investigation of major contemporary issues within the information profession. Topics range from censorship

to the need for a national information policy and change each time the course is offered.

Course may be repeated for credit for up to 9 units when content changes.

Prerequisite(s): INFO 200, INFO 202, and INFO 204.

Grading: Letter Graded

INFO 282 - Seminar in Library Management

1-3 unit(s)

Application of management theory to specific problems. Readings and discussions of the development of effective strategies for planning and implementing organizational change. Content changes each time offered.

Course may be repeated for credit for up to 9 units when content changes.

Prerequisite(s): INFO 200 and INFO 204. Not available to Open University Students.

Grading: Letter Graded

INFO 283 - Marketing of Information Products and Services

1-3 unit(s)

Applications of marketing concepts to library and information services. Market analysis, use surveys, market targeting and introduction of services.

Prerequisite(s): INFO 200 and INFO 204. Not available to Open University Students.

Grading: Letter Graded

INFO 284 - Seminar in Archives and Records Management

1-3 unit(s)

In-depth study of current issues and practices in archives and records management. The course addresses new areas of research and application such as oral history, sound and visual archives, digitization, archival automation, archival security, genealogy, and more.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): INFO 200, INFO 202, INFO 204

Grading: Letter Graded

INFO 285 - Applied Research Methods

1-4 unit(s)

Selection, formulation and development of problems in library and information science research. Evaluation of published research and in the field.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): INFO 200, INFO 202, INFO 204

Grading: Letter Graded

INFO 286 - Interpersonal Communication Skills for Librarians

1-3 unit(s)

The principles and practice of interpersonal communication; small group and peer relationships.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): INFO 200 and INFO 204. Not available to Open University Students.

Grading: Letter Graded

INFO 287 - Seminar in Information Science

1-3 unit(s)

Current issues and problems in information retrieval as related to concepts and theories of information science.

Course may be repeated for credit for up to 12 units when content changes.

Prerequisite(s): INFO 200. Not available to Open University Students.

Grading: Letter Graded

INFO 289 - Advanced Topics in Library and Information Science

3 unit(s)

Advanced independent examination of selected issues and problems in library and information science with a focus on the integration of theory and practice. Issues and problems addressed will vary each semester.

Grading: Mandatory Credit/No Credit/RP

INFO 292 - Professional Experience: Projects

3 unit(s)

Gives students the opportunity to complete a professional project related to the theory and method of Library & Information Science in an information organization or institution, and to gain practical experience in one or more areas of LIS.

Prerequisite(s): INFO 200, INFO 202, INFO 204, plus six advanced courses.

Grading: Credit/No Credit/Incomplete.

INFO 293 - Introduction to Data Networking

3 unit(s)

An introduction to computer networking in both Lan and Wan environments with an emphasis on hands-on projects.

Prerequisite(s): INFO 200, INFO 202, INFO 204. INFO 240 desirable.

Grading: Letter Graded

INFO 294 - Professional Experiences: Internships

2-4 unit(s)

Supervised professional experience in an approved public, academic, or special library or other information-based organization.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): INFO 200, INFO 202, INFO 204, and three advanced courses.

Grading: Credit/No Credit

INFO 295 - School Library Field Work

3 unit(s)

A supervised professional experience of school librarianship at the levels of both elementary and secondary (middle or high) schools. Emphasis is on observation and guided practice with a credentialed school librarian (library media teacher).

Prerequisite(s): INFO 200, INFO 202, INFO 204.

Grading: Credit/No Credit

INFO 298 - Special Studies

1-3 unit(s)

Advanced individual research and projects related to libraries and information systems. Available only to those students who have completed the major portion of the degree coursework.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): INFO 200, INFO 202, INFO 204, instructor consent.

Grading: Mandatory Credit/No Credit/RP

INFO 299 - Thesis

3 unit(s)

Approved thesis proposal and consent of a faculty advisor required.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): INFO 200, INFO 202, INFO 204, INFO 285.

Grading: Mandatory Credit/No Credit/RP

INFO 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Instructional Design and Technnology

IDT 201 - Introduction: Instructional Systems & Learning Technologies

3 unit(s)

Introduction to instructional systems, focusing on systematic instructional design approaches, history of the field, theories and models of instructional design and human performance technology (HPT), key concepts, and professional roles. Students apply learning technologies to workplace, instructional, and training contexts.

Grading: Letter Graded.

IDT 202 - Systematic Design: Instruction & Human Performance

3 unit(s)

Application of systematic processes and approaches for designing instructional design systems and improving human productivity and performance. Students explore stages of the instructional systems model and human performance improvement strategies and interventions in a variety of learning environments.

Grading: Letter Graded.

IDT 203 - Trends and Issues in Instructional Design and Human Perf

3 unit(s)

Examination of current and future trends and issues that impact the instructional design and human performance field. Students acquire the knowledge and skills to analyze and apply these trends and issues to instructional and performance solutions.

Grading: Letter Graded.

IDT 204 - Theories of Teaching, Learning, and Human Cognition

3 unit(s)

Examination of major theories that support teaching, learning, and human cognition in the instructional design field. Students apply current learning and instructional theories to real-world scenarios and development of learner-centered instruction. Students create personal theories of learning and instructional design.

Grading: Letter Graded.

IDT 205 - Learning Design and Technologies

3 unit(s)

Exploration of design principles and strategies applied to practical solutions for integrating technologies into instructional products and human performance solutions in a range of education and industry settings. Students design, implement, and evaluate a technology-based instructional or human performance project.

Grading: Letter Graded.

IDT 206 - Advanced Instructional Design and Development

Exploration of advanced techniques and practices in instructional design and development for a variety of design and performance contexts. Students employ theory-based design decisions and reflective problem-solving strategies to design and develop instructional or performance-based projects for complex solutions.

Grading: Letter Graded.

IDT 207 - Learning Analytics and Data-Driven Evaluation and Assessment

3 unit(s)

Examination of educational informatics and learning analytics within a systems design framework to optimize learning and performance solutions. Students learn and apply analytical, system-based approaches to make data-driven decisions about evaluation and assessment for training and human performance technology projects.

Grading: Letter Graded.

IDT 298 - Capstone Applied Project and e-Portfolio

3 unit(s)

For the capstone course, students demonstrate mastery of knowledge and skills acquired during the degree program through 1) an applied project solving an instructional and/or human performance problem; and 2) an e-portfolio demonstrating accomplishment of all program learning outcomes.

Grading: Letter Graded.

Interdisciplinary Engineering

ENGR 5 - Science of High Technology

3 unit(s)

Scientific principles underlying commonly used high technology devices and systems such as the computer, cell phone, IPODS, cameras, and the Internet. Emphasizes practical applications of scientific principles to contemporary engineering products and services.

Satisfies B1: Physical Science.

Grading: Letter Graded

ENGR 8Q - Engineering Success

1 unit(s)

Combination of workshop and lab exercises emphasizing group interaction, communications skills and problem solving for incoming students. May be repeated for a total of 2 units.

Misc/Lab: Activity 2 hours.

Course may be repeated for credit for up to 2 units.

Grading: Credit/No Credit

ENGR 10 - Introduction to Engineering

3 unit(s)

Introduction to engineering through hands-on design projects, case studies, and problem-solving using computers. Students also acquire non-technical skills, such as team skills and the ability to deal with ethical dilemmas.

Lecture 2 hours/Lab 3 hours.

Satisfies E: Human Understanding & Development.

Prerequisite(s): Eligible for MATH 19 and Writing Enrollment Category W-I or W-II, or ENGL 1AF with a grade of CR, or ENGL 1A with a grade of C- or better. Engineering Majors Only

Grading: Letter Graded.

ENGR 25 - The Digital World and Society

3 unit(s)

The secure, effective and ethical use of information technology. The effect of such technology on people and institutions. Technology-related challenges to society and policy. Frameworks for the analysis of information technology with respect to its cultural, historical, environmental, and spatial contexts.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Cross-listed with CS 25. General Engineering is responsible for scheduling.

ENGR 60SL - Engineering Projects in Community Service

1 unit(s)

EPICS is a service-learning course where engineering students work in multidisciplinary teams to undertake community-identified engineering projects. Students will gain insight into design and development processes and perform and report upon tasks consistent with their level of discipline expertise.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Engineering major; non-remedial

Grading: Letter Graded

ENGR 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 6 units.

Grading: Mixed Grading

ENGR 100W - Engineering Reports

3 unit(s)

Regular technical writing assignments and company-focused oral presentations while integrating effects of environmental factors as they relate to products, systems and engineering processes.

Lecture 3 hours/lab 3 hours.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability + Writing in the Disciplines (WID).

Prerequisite(s): ENGL 1B or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: All Engineering, Aviation, Engineering Technology, Mathematics and Applied Mathematics.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

ENGR 101 - Engineering Seminar

1 unit(s)

Seminars and guest lectures covering engineering-related career development, ethics, report writing, professionalism, finance, self-assessment and how to effectively function in a multidisciplinary environment. Repeatable course to be taken in consecutive semesters of the junior year of the BS General Engineering.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): Upper Division Standing in General Engineering Program.

Grading: Letter Graded

ENGR 102 - Renewable Energy Engineering

3 unit(s)

Scientific and engineering concepts associated with energy and the environment. Overview of the physical concept of energy and the scientific thoughts and processes associated with energy. Primary sources of energy in use today. Study of conservation of energy, and how energy use has synergism with pollution and its global effects on sustainability.

Prerequisite(s): College level calculus, physics and chemistry.

Grading: Letter Graded

Sustainability Focused - SDG 7: Affordable and Clean Energy

ENGR 119 - Energy and the Environment

3 unit(s)

Introduces students to the sources of energy that fuel industrial civilization and the environmental impacts of energy extraction, distribution, and consumption. Explores a range of approaches to moving society toward a more sustainable energy future.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Cross-listed with ENVS 119. Environmental Studies is responsible for scheduling.

ENGR 120 - Programming Concepts for Behavioral and Social Science Applications

3 unit(s)

This course covers the application of Python programming to the fields of behavioral and social sciences, as well as basic building blocks of computers and the Web. This course also covers how programming is used in various careers.

Prerequisite(s): STAT 95 or MATH 30 or MATH 30X or MATH 71 or MATH 71X.

Grading: Letter Graded

ENGR 121 - Data Structures and Algorithms for Behavioral and Social Science Applications

3 unit(s)

Represent and analyze behavioral and social science data using Python and data structures such as classes, trees, and graphs; use related algorithms to solve behavioral and social science problems.

Prerequisite(s): ENGR 120 with C- or instructor consent

Grading: Letter Graded

ENGR 122 - Data Technology for Behavioral and Social Science Applications

3 unit(s)

Use R programming language to collect, analyze, and present data sets from behavioral and social science applications.

Prerequisite(s): ENGR 120

Grading: Letter Graded

ENGR 130 - Introduction to Intellectual Property for Engineers

3 unit(s)

Covers the general framework for intellectual property law including an overview of patent, trademark, copyright, and trade secret laws. Covers how an engineer can spot and address common intellectual property issues in corporate settings.

Prerequisite(s): Any 100W course with a grade of "C" or better.

Grading: Letter Graded

ENGR 131 - Introduction to Patents for Engineers

3 unit(s)

Covers the core concepts of U.S. patent law and the process of obtaining a patent. Covers contents of a patent and patent strategies including third-party challenges of patentability, patent infringement and defenses.

Prerequisite(s): ENGR 130.

Grading: Letter Graded

ENGR 157SL - Community Action/Community Service

3 unit(s)

A campus-wide service learning program with opportunities for direct involvement with local community services, both off campus and on campus. Weekly seminars held on campus or at the field site, plus four to six hours of community service work per week at the field site.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with COMM 157SL / EDUC 157SL / HA 157SL / SCI 157SL. Communication Studies is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

ENGR 160SL - Engineering Projects in Community Service UD

1 unit(s)

EPICS UD is a service-learning course where upper division engineering students work in multidisciplinary teams to undertake community-identified engineering projects. Students will gain insight into design and development processes and perform and report upon tasks consistent with their level of discipline expertise.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Engineering major; upper division standing

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

ENGR 180 - Individual Studies

1-3 unit(s)

Individual work on special topics, by arrangement.

Prerequisite(s): Upper division standing and instructor consent. Allowed Declared Majors: Engineering. Not

available to Open University Students.

Grading: Credit/No Credit

ENGR 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ENGR 194 - Business Organization and Management of Technology Enterprise

3 unit(s)

This course provides a "top down" overview of how commercial business works, including the business components: Corporate Environments, Human Resources, Legal, Marketing, Customer Insights, Management/Leadership. Communication and business soft skills will be covered providing a foundation for a solid business acumen. All class sessions focus on local and global perspectives.

Prerequisite(s): BUS 193 or ENGR 193.

Grading: Letter Graded

Cross-listed with BUS5 194. General Engineering is responsible for scheduling.

ENGR 195A - Global and Social Issues in Engineering

1 unit(s)

Interdisciplinary seminar treating social and global impacts of technology and engineering. This integrated GE experience requires students to apply these concepts in their senior project classes. Students must enroll concurrently in their department senior project course Part A.

Satisfies SJSU Studies S: Self, Society & Equality in U.S. when taken as part of Engineering Major sequence.

Prerequisite(s): ENGR 100W with a C or better. Engineering Majors only. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses.

Corequisite(s): Enrollment in major capstone course or equivalent.

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with ENGR 195B and Engineering major specific sequence. Must be passed with a C or better to earn S and V

Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

ENGR 195B - Global and Social Issues in Engineering

1 unit(s)

Second course in a two-course sequence to support the integration of General Education Area S and Area V into the engineering major. Case study approach to the relationship of engineering to social, ethical and cultural aspects of the broader community both in the U. S. and worldwide. when taken as part of Engineering Major Sequence.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Repeatable for credit.

Prerequisite(s): ENGR 195A (with a grade of "C" or better). Engineering Majors Only. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Corequisite(s): Enrollment in major capstone course or equivalent.

Grading: Letter Graded

Note(s): To receive credit for GE Areas S and V, students must complete both ENGR 195A and ENGR 195B, each with a grade of C or better. They must also complete their senior project course sequence and earn a grade of C or better in each course.

Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

ENGR 195C - Interdisciplinary Senior Project I

3 unit(s)

Interdisciplinary team senior design projects. Proposal preparation with feasibility plans and specifications; oral and written reports; professional seminars.

Satisfies SJSU Studies S: Self, Society & Equality in U.S. when taken as part of an engineering major sequence.

Prerequisite(s): ENGR 100W; eligible for senior project course in major.

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: ENGR 195D, ENGR 195A and ENGR 195B

ENGR 195D - Interdisciplinary Senior Project II

3 unit(s)

Construction, testing, and evaluation of the design from ENGR 195C culminating in demonstrations and written and oral presentations to faculty, industry mentors and peers.

Satisfies SJSU Studies V: Cultures and Global Understanding when taken as part of an engineering major sequence.

Prerequisite(s): ENGR 195C with a grade of "C" or better.

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: ENGR 195C, ENGR 195A and ENGR 195B

ENGR 195E - Interdisciplinary Computing Project

3 unit(s)

Culminating project experience for students to apply computing knowledge and skills to solving problems or generating insights in their chosen area of study such as behavioral and social sciences.

Prerequisite(s): ENGR 120 or Instructor Consent

Grading: Letter Graded

ENGR 197 - Cooperative Education Project

1-3 unit(s)

Professional experience in engineering or engineering technology through a cooperative education project. Part- or full-time on-site paid work experience based on a project assignment in area of student's career objective.

Repeatable for a total of 3 units.

Prerequisite(s): Student must have a co-op or internship secured prior to enrollment. Written proposal signed by the course instructor and the student's co-op or internship supervisor.

Grading: Credit/No Credit

ENGR 198 - Technology and Civilization

3 unit(s)

History, development, and use of technology in different cultures. Technology's impact on society, global environment, the workplace, cultural values, gender roles, and newly industrialized countries of the world.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CMPE 198 / ME 198 / TECH 198. Technology is responsible for scheduling.

Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

ENGR 199A - Senior Design Project I

1 unit(s)

First semester of year-long team project carried out under faculty supervision. Project proceeds from problem definition to analysis, design and validation, experimentation including possible construction and testing.

Lab 3 hours.

Prerequisite(s): Completed ENGR 100W with a "C" or better and Senior standing in BS Interdisciplinary Engineering Program. Completed at least 9 upper division courses that meet the BS IDE graduation requirements.

Grading: Letter Graded

ENGR 199B - Senior Design Project II

2 unit(s)

Second semester of a two-semester team project carried out under faculty supervision. Project proceeds from problem definition to analysis, design and validation, experimentation including possible construction and testing.

Lab 6 hours.

Prerequisite(s): ENGR 199A with a grade of C or better.

Grading: Letter Graded

ENGR 200W - Engineering Reports and Graduate Research

3 unit(s)

Graduate level technical writing workshop designed to develop advanced communication skills that will readily transfer to the engineer's professional needs, along with research methodologies, copyright issues, and proper documentation for the master's thesis project.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing and completion of an undergraduate writing course.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGR 201 - Engineering Analysis

3 unit(s)

Mathematical techniques for solving engineering problems. Topics include linear systems analysis, probability and statistics, and differential equations. Applications include modeling and simulation, optimization, projection, experimental design. Several computer projects are required.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

ENGR 202 - Systems Engineering

3 unit(s)

Large scale system design and development. Integrated approach including mission statement, synthesis of design concepts, tradeoff studies, risk assessment and interactions encountered in the optimal design, development, manufacture and test of systems.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ENGR 203 - Engineering Management

3 unit(s)

Students will develop contemporary expertise in the principles of engineering finance, management, IP, operations management, performance metrics, and their application to design, development, and commercialization of new products and services in dynamic environments.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Letter Graded

ENGR 206 - Renewable Energy Systems and Policies

3 unit(s)

Advanced knowledge in renewable energy resources and policies such as solar, wind, geothermal, biomass, waves and tidal energy. Solar resources and technologies, Integrated Resource Planning and System Operations, Enabling technologies and new energy use trends: Smart Grid, Demand Response, Energy Storage, and Electric Vehicles.

Prerequisite(s): Instructor consent.

Grading: Letter Graded.

ENGR 241 - Modeling and Control of Energy Systems

3 unit(s)

Presents the fundamentals of system dynamics and feedback control with applications in alternative energy system; deriving system equations for mechanical, electrical, and electrochemical systems; state-variable and transfer function representation of dynamic systems; transient response analysis; closed-loop control analysis and design; state estimation; simulation of energy systems in the computer environment.

Prerequisite(s): ENGR 201.

Grading: Letter Graded

ENGR 242 - Power Converters for Alternative Energy Systems

3 unit(s)

Covers the use of power converters in modern alternative energy applications, including the design and simulation of power converters in renewable energy systems (solar energy, wind energy, etc.), and electrified transportation (electric vehicles and electrified aircrafts).

Pre/Corequisite(s): ENGR 241.

Grading: Letter Graded

ENGR 243 - Energy Storage Applications and Manufacturing

3 unit(s)

Fundamental topics for understanding alternative energy systems including electrochemistry and manufacturing best practices with application to batteries, solar and fuel cells. Lectures will explore the design process for alternative energy systems and components through applied examples. The course includes examples that follow the design process through from developing requirements/specifications for the system to writing a comprehensive validation and test plan.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

ENGR 244 - Risk Management, Resilience, and Reliability of Energy Systems

3 unit(s)

Introduces Resilience, Reliability and Risk Management as they are critical elements of an effective and sustainable socio-technical and technical systems, including an energy system. The course combines lectures, reference materials and case studies to provide students with high-level concepts, methods and tools and draws from case studies and guest speakers to engage and guide students in the analysis of actual systems and events. The course also demonstrates the interconnectivity, interactivity, and interdependences of various factors including technological, organizational, human operational, outside forces in a given system and concepts and approaches to proactively address uncertainties (risk management), and recover from failures (resiliency), in order to assure the continuity of the system (reliability.)

Prerequisite(s): An undergraduate course on Engineering Systems, Engineering Probability and Statistic, or instructor consent.

Grading: Letter Graded

ENGR 250 - Complex Engineering Systems

3 unit(s)

Complex Engineering Systems (CES) are like Cyber-Physical Systems (CPS) and IIoT. They are systems-of-systems tightly coupled with their cyber (i.e. computation, communication and control) and sensing actuation. Topics include: model-based systems engineering; models integrations and safety analysis; and several innovative techniques: integration and visualization of system models, AI/ML, blockchain, and control/communications techniques.

Grading: Letter Graded

ENGR 251 - Complex Engineering Systems (CES) Cybersecurity

3 unit(s)

The course exposes students to the Complex Engineering Systems, Cyber-Physical Systems, and IIoT foundational concepts of cybersecurity principles. It introduces the Cyber Resiliency Framework based on Cyber Maturity Model Certificate (CMMC), methodologies and application in the early design stages, life-cycle process, security and risks management and mitigations.

Grading: Letter Graded

ENGR 261 - Battery Technologies I

3 unit(s)

ENGR 261 teaches fundamentals of battery technologies. Concepts and understanding of electrochemical interactions, kinetics and thermodynamics in batteries will be covered. Basic concepts, material development and modeling of lithium-ion batteries will be discussed as well as understanding of flow batteries. Advanced and future technologies for next generation batteries will be introduced.

Grading: Letter Graded

Sustainability Related - SDG 7: Affordable and Clean Energy

ENGR 262 - Battery Technologies II

3 unit(s)

This follow-up course will provide an in-depth look at batteries with a focus on cutting-edge research and development. Topics such as material synthesis techniques, science of electrode fabrication, advanced characterization techniques, battery life degradation mechanisms, design of battery electrodes, thermal management, and state-of-charge and state-of-health measurements will be covered.

Grading: Letter Graded

ENGR 263 - Battery Electrochemistry

3 unit(s)

This course will cover the basics of electrochemistry, including thermodynamics, kinetics, mass transfer effects, reference electrodes, porous electrodes, dilute and concentrated solution theory, and electro-analytical methods, including voltammetry, coulometry and impedance spectroscopy.

Grading: Letter Graded

ENGR 264 - Battery Manufacturing

3 unit(s)

Lectures will cover the manufacturing of Li-ion cells and battery packs in detail and the basics steps in manufacturing, equipment, cost considerations, and quality issues related to manufacturing.

Grading: Letter Graded

ENGR 265 - Battery Control Systems

3 unit(s)

Learn how to design, analyze, and perform experiments for model and system validation work on battery control systems in electric vehicles, solar and/or wind renewable energy storage, and retrieval systems for the electric grid.

Grading: Letter Graded

ENGR 271 - Passive Optical Sensing

3 unit(s)

An introduction to passive optical sensing systems, including application areas, phenomenology and component/technology performance analysis. Detector types, principles, noise and sensor cooling issues will be addressed. Case studies and system analysis of complete passive optical sensing systems included.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

ENGR 281 - Master's Project/Thesis Preparation Seminar

1 unit(s)

Preparation for project or thesis research, including development of scope, assembly of committee,

preparation of schedule, completion of literature survey, completion of introductory chapter for final report, and research proposal examination at the end of the course.

Misc/Lab: Lab 3 hours.

Prerequisite(s): Complete common and option core courses, a grade of "B" or better in ENGR 200W or any GS&R approved course that satisfies the Graduate Writing Competency Requirement and advancement to candidacy.

Grading: Credit/No Credit/Incomplete.

ENGR 295A - Master Project I

3 unit(s)

In-depth developmental engineering work relating to problems of interest to an individual or a group of students. Project includes proposal formulation, analysis, design, implementation, and testing.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Graduate Advisor consent. Not available to Open University students.

Grading: Credit/No Credit/Incomplete.

ENGR 295B - Master Project II

3 unit(s)

A continuation of ENGR 295A. Students complete the in-depth project, write a detailed project report and make a comprehensive presentation and demonstration of project.

Prerequisite(s): Advancement to Candidacy of Master's Degree and CMPE 295A or CMPE 295W. Not available to Open University students.

Grading: Mandatory Credit/No Credit/RP

ENGR 297C - Special Topics in Systems Engineering

3 unit(s)

Special seminars and discussions to augment regularly-scheduled graduate courses. Emphasis on systems, process, product, and service integration in short-life cycle product and service industries using systems, concurrent engineering, and cost of ownership principles.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

ENGR 297D - Special Topics in Emerging Technologies

1-3 unit(s)

Special topics in emerging technologies that emphasize new development in technologies, skills and knowledge which are suitable for the new technologies development such as but not limited to Machine Learning, Big Data Processing, Analytics, Data Analysis, and Information retrieval.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

ENGR 298 - Master's Project

2 unit(s)

Completion of an in-depth project, a detailed project report, followed by a comprehensive presentation and demonstration of the project.

Lab 6 hours.

Prerequisite(s): ENGR 281, satisfaction of English Proficiency requirement, advancement to candidacy.

Grading: Mandatory Credit/No Credit/RP

ENGR 298I - MSE Internship

1-3 unit(s)

Student will be employed in an industry as an intern, working in an engineering area to their MSE option. This course supplements and supports the student's program of study.

Prerequisite(s): Students must have graduate standing.

Grading: Mandatory Credit/No Credit/RP

ENGR 299 - Master's Thesis

1-6 unit(s)

Master's thesis work in engineering.

Misc/Lab: Lab 9 hours.

Prerequisite(s): Advancement to candidacy for master's degree; written contract with thesis advisor and graduate coordinator.

Grading: Mandatory Credit/No Credit/RP

ENGR 1081W - Basic Writing Workshop

1 unit(s)

Weekly writing to improve grammar and punctuation skills needed for student success. Repeatable for up to 6 units.

Misc/Lab: Activity 3 hours.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

ENGR 1290R - Culminating Experience Supervision

1 unit(s)

This course covers the same topics and has the same objectives as ENGR 298/ENGR 299.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Student must have been enrolled in ENGR 298 or ENGR 299 in a previous semester.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Interior Design

DSIT 5 - Introduction of Interior Design and Architecture

3 unit(s)

A comprehensive introduction to the field of Interior Architecture. Focuses on social, psychological, economic and aesthetic challenges facing designers in the 21st century. Integration of design principles, creative expression and consumer information pertaining to living environments and public spaces.

Grading: Letter Graded

DSIT 10 - Sketching, Drawing + Modeling

3 unit(s)

Explore the processes of conceptual sketching and drawing. Utilize and teach architectural documentation techniques such as interior: floor plans, reflected ceiling plans, elevations, sections, details, perspectives and axonometric drawings. Demonstrate techniques in pencil, contemporary pens, markers, and artistic visualization techniques.

Corequisite(s): DSIT 5

Grading: Letter Graded

DSIT 29 - Design Process

3 unit(s)

Development of skills to work with point, line and plane to create volumes with spatial relationships.

Grading: Letter Graded

DSIT 33 - Architectural Presentation

3 unit(s)

Further study, exploration, and comprehensive development of the technical and conceptual aspects of architectural drawing and modelmaking used to visualize innovative and functional interior spaces.

Prerequisite(s): DSIT 29

Corequisite(s): DSIT 34

Grading: Letter Graded

DSIT 34 - Interior Architecture Foundation Studio

3 unit(s)

In-depth study exploration and comprehensive development of innovative and functional interior spaces using the technical and conceptual aspects of architectural drawing and architectural model making and the theoretical and conceptual methodologies used to formulate interior architectural space. Course emphasizes design theory, process, programming and human factors. Focus on residential and small-scale commercial building types.

Misc/Activity: Activity 6 hours

Prerequisite(s): DSIT 29

Corequisite(s): DSIT 33

Grading: Letter Graded

DSIT 83 - Visual Communication I

3 unit(s)

Principles of digital drawing and presentation tools essential to 2D architectural representation. Principle skills and disciplines of making 3D forms through the use of digital technology.

Misc/Lab: Activity 6 hours

Prerequisite(s): DSIT 5, DSIT 10.

Corequisite(s): DSIT 015, DSIT 29.

Grading: Letter Graded

DSIT 100 - Building Codes

3 unit(s)

Introduction to building codes and legal regulations related to interior architecture design. Egress, occupancy levels, regulations for the handicapped, general accessibility requirements, finishes and material specifications and fire ratings are highlighted in the class.

Activity 6 hours.

Prerequisite(s): DSIT 34. Allowed Declared Majors: Design Studies BA and Interior Design BFA majors only.

Grading: Letter Graded

DSIT 101 - Architectural Systems and Materials + Adv Modeling

3 unit(s)

This course covers the functional, aesthetic and environmental aspects of building materials and systems focusing on the documentation of design through BIM software.

Lecture 3 hours/Activity 4 hours.

Prerequisite(s): DSIT 33 and DSIT 34. Allowed Declared Majors: Design Studies BA and Interior Design BFA majors only.

Grading: Letter Graded

DSIT 102 - Computer Graphics for Interior Architecture

3 unit(s)

Examination of programs related to the development of state of the art presentation methods and portfolios.

Prerequisite(s): DSIT 34.

Grading: Letter Graded

DSIT 103 - Interior Architecture Conceptual Design Studio

3 unit(s)

Organize programmatic adjacencies and allocate planned spaces based on a singular design concept or objective. Conceptualize and execute a design through the use of 3D modeling software, digital animation and analogue methods of fabrication. Site analysis, formal, thermal and material issues problem-solving, iterative and rigorous production, experimentation, and research. Presentation of work to a jury.

Misc/Lab: Activity 6 hours

Prerequisite(s): DSIT 33 and DSIT 34. Allowed Declared Majors: Interior Design and Art.

Corequisite(s): DSIT 102.

Grading: Letter Graded

DSIT 104 - Interior Architecture Space Planning Studio

3 unit(s)

Further project-oriented study, examination and analysis of planning and designing innovative and functional interior spaces. Emphasis on the space planning of state of the art commercial environments. Additional emphasis on implementation and interpretation of laws, codes and regulations. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): DSIT 103 and pass portfolio review .

Grading: Letter Graded

DSIT 105 - Interior Architecture Advanced Design Studio

3 unit(s)

In-depth project oriented study, examination and analysis of planning and designing innovative and functional interior spaces. Emphasis on the advanced design of state of art commercial environments. Additional emphasis on implementation and interpretation of laws, codes and regulations.

Prerequisite(s): DSIT 103, and pass portfolio review.

Grading: Letter Graded

DSIT 106 - Architectural Project Materials

3 unit(s)

Discussion and analysis of materials for interior architecture lectures and field trips emphasizing aesthetic sensibilities, human factors, manufacturing processes and specifications.

Prerequisite(s): DSIT 34. Allowed Declared Majors: Interior Design and Art.

Grading: Letter Graded

DSIT 107 - Furniture Design

3 unit(s)

Design and production of original furniture, including drawing, prototypes and materials selection.

Prerequisite(s): DSIT 34 or instructor consent.

Grading: Letter Graded

DSIT 108 - Architectural Lighting Design

3 unit(s)

Theory and practice of architectural lighting emphasizing aesthetics, drawing, specifications, terminology, calculations and advances in technology. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): DSIT 103, DSIT 104 or upper division standing and instructor consent.

Grading: Letter Graded

DSIT 109 - Object Design for Interiors

3 unit(s)

Advanced exploration of object design theory and practice with projects involving high levels of aesthetic and functional complexity.

Prerequisite(s): DSIT 105, DSIT 106 and DSIT 108.

Grading: Letter Graded

DSIT 110 - Capstone Thesis Studio

3 unit(s)

Students will select an appropriate project type, determine the site, prepare existing drawings, write a project statement and program, and develop a design solution. Work must be presented to a jury of professionals, and exhibited in a thesis exhibition.

Prerequisite(s): DSIT 104, DSIT 105.

Grading: Letter Graded

DSIT 111 - Interior Architecture Seminar

3 unit(s)

A capstone course for discussion of design work and professional values as a basis for portfolio and resume preparation.

Prerequisite(s): DSIT 105 and enrollment in graduation semester. Allowed Declared Majors: Interior Design.

Grading: Letter Graded

DSIT 112 - Professional Practice of Interior Archit

3 unit(s)

Examination of the business, legal, financial, and managerial considerations of interior design practice as well as the role and responsibilities of a design assistant, with emphasis on ethical considerations and the legal issues of the profession and licensing.

Prerequisite(s): DSIT 100.

Grading: Letter Graded

DSIT 116 - Solar Energy Analysis

3 unit(s)

Provides a comprehensive overview of sustainable solar energy resources, economics, and policy. Includes a review of basic solar energy physics and interdisciplinary analysis of economic, social justice and environmental strategies for a solar powered civilization.

Grading: Letter Graded.

Cross-listed with ENVS 116. Environmental Studies is responsible for scheduling.

Sustainability Focused - SDG 7: Affordable and Clean Energy

DSIT 132 - Solar Home Design

3 unit(s)

Techniques for designing environmentally-sensitive, healthy, passive solar homes via site selection, energy conservation, lighting, non-hazardous natural building materials. Residential passive solar heating and cooling approaches for retrofits and new construction. For homeowners, teachers, professional designers and architects.

Prerequisite(s): ENVS 1 or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 132. Environmental Studies is responsible for scheduling.

Sustainability Focused - SDG 7: Affordable and Clean Energy

DSIT 151 - Introduction to Urban Design

4 unit(s)

Principles, goals and methods of the urban design process. Urban design as the comprehensive treatment of the human-made environment.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 151. Urban and Regional Planning is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

DSIT 152 - Introduction to Urban Design Studio

4 unit(s)

Introduction to the analysis of alternative urban design policies to direct urban form development. Course may be repeated for credit when topic changes.

Misc/lab: Activity 6 hours.

Prerequisite(s): URBP 151 or instructor consent.

Grading: Letter Graded

Cross-listed with URBP 152. Urban and Regional Planning is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

DSIT 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Letter Graded

DSIT 192C - History of Interior Design

3 unit(s)

Survey of interior design through historical, political, social, economic, technological, and aesthetic factors that shape the built environment. Design will be analyzed formally and through parallel developments in the arts.

Prerequisite(s): ARTH 70B or ARTH 72, completion of Area Z, or instructor consent.

Grading: Letter Graded

Cross-listed with ARTH 192C. Art and Art History is responsible for scheduling.

Sustainability Related

Italian

ITAL 1A - Elementary Italian

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Grading: Letter Graded

ITAL 1B - Elementary Italian

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): ITAL 1A (or equivalent).

Grading: Letter Graded

ITAL 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ITAL 180 - Individual Studies in Italian

1-3 unit(s)

Individual work by arrangement.

Grading: Credit/No Credit

ITAL 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Japanese

JPN 1A - Elementary Japanese

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Grading: Letter Graded

JPN 1B - Elementary Japanese

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): JPN 1A (or equivalent).

Grading: Letter Graded

JPN 25A - Intermediate Japanese

4 unit(s)

Continuation of JPN 1B. Preparation for advanced courses in the language.

Satisfies C2: Humanities.

Prerequisite(s): One Year of college-level Japanese (or equivalent or SJSU placement exam).

Grading: Letter Graded

JPN 25B - Intermediate Japanese

4 unit(s)

Continuation of JPN 25A. Preparation for advanced courses in the language.

Satisfies C2: Humanities.

Prerequisite(s): Three semesters of college Japanese (or equivalent).

Grading: Letter Graded

JPN 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

JPN 101A - Advanced Japanese

4 unit(s)

Readings, oral discussion, study of syntax and composition.

Prerequisite(s): Four semesters of college Japanese (or equivalent).

Grading: Letter Graded

JPN 101B - Advanced Japanese

4 unit(s)

Readings, oral discussion, study of syntax and composition.

Prerequisite(s): Four semesters of college Japanese (or equivalent).

Grading: Letter Graded

JPN 101C - Advanced Conversational Japanese

4 unit(s)

This course focuses on politeness aspects of Japanese language that appear in L19, 20, and 23 of Genki textbook II and heightens conversational competence to intermediate high in ACTFL through project works.

Prerequisite(s): JPN 25B

Grading: Letter Graded

JPN 102A - Japanese Culture

4 unit(s)

History, geography, fine art and daily life of Japan. May be repeated when content changes.

Course is repeatable for up to 8 units.

Prerequisite(s): JPN 25B.

Grading: Letter Graded

JPN 102B - Local and Minority Cultures in Japan

3 unit(s)

Examines how identities and cultures of the ethnic minorities of Japan, such as Okinawans, Amamians, Ainu and Koreans, changed over time from the Edo era to the present, interacting with majority groups in mainland Japan and the U.S. under their political control. Repeatable for credit when topic changes.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

JPN 103 - Japanese Ideography and Calligraphy

4 unit(s)

Ideographs and Kana-syllabaries in their historical contexts-meaning, imagery, socio-anthropological backgrounds, formation and use of modern Japanese. Studio practice.

Prerequisite(s): JPN 101C or equivalent.

Grading: Letter Graded

JPN 105 - Media Japanese

4 unit(s)

Examination of language that appears in Japanese media such as newspapers, Internet news, and TV news to enhance four language skills (listening, reading, speaking and writing) to advanced level.

Prerequisite(s): JPN 101C or equivalent
Grading: Letter Graded

JPN 107 - Japanese for Business Professionals

4 unit(s)

Advanced Japanese course for specific (business) purposes. It will acquaint students with practical vocabulary, a wide range of language structures, business manners, and business customs for developing communication skills useful in conducting business in Japanese.

Prerequisite(s): JPN 101C or equivalent.
Grading: Letter Graded

JPN 110 - Japanese Linguistics

4 unit(s)

Structural analysis of Japanese from historical as well as descriptive perspectives and its application to distinct Japanese social and communicative behaviors.

Prerequisite(s): JPN 101C or equivalent.
Grading: Letter Graded

JPN 120 - Japanese Literature and Translation

4 unit(s)

Examination of Modern Japanese Manga Literature and Light novels and their translation to heighten learners reading and translation skills.

Prerequisite(s): JPN 101C or equivalent.
Grading: Letter Graded

JPN 130 - Readings in Japanese Culture

4 unit(s)

Readings from contemporary texts (including scholarly essays, newspapers and narrative) on various aspects of Japanese culture.

Prerequisite(s): JPN 101C or equivalent.
Grading: Letter Graded

JPN 135 - Japanese Culture and Society in Films

4 unit(s)

Examination of a wide variety of Japanese films to heighten learners listening, reading, translational skills of Japanese language and analytical skills of social and cultural criticism of Japan.

Pre/Corequisite(s): JPN 101B.
Grading: Letter Graded

JPN 140 - Japanese Drama and Lyrics

4 unit(s)

Interpretation of Japanese drama and lyrics from Showa to the present to foster advanced level of Japanese language competence. Analysis of stylistic features, Japanese people and society's socio-cultural values and their historical backgrounds.

Prerequisite(s): JPN 101C or equivalent

Grading: Letter Graded

JPN 150 - Japanese Narratives and Life stories

4 unit(s)

Examination of Japanese narratives (folk tales) and life stories that represent Japanese society and archetype of Japanese people's psychology.

Prerequisite(s): JPN 101C or equivalent

Grading: Letter Graded

JPN 160 - Special Topics in Japanese Studies

3 unit(s)

A 25-day summer program that focuses on Japanese language, culture, and history. Explores Japanese culture and history through culture instruction conducted at cultural centers in Uji-city, Kyoto and field trips to historical sites and Japanese companies in Kyoto and other cities such as Osaka, Nara, Hiroshima, and Tokyo.

Course may be repeated for credit for up to 9 units.

Grading: Letter Graded

JPN 170 - Japanese Language Proficiency Test (JLPT) Preparation

4 unit(s)

Preparation for N2 or N3 level of the Japanese Language Proficiency Test (JLPT). Includes skills to expand vocabulary, grammar and Kanji of the N2/N3 levels, as well as a variety of self-study and test-taking strategies useful for the JLPT.

Prerequisite(s): JPN 101A

Grading: Letter graded.

JPN 180 - Individual Studies in Japanese

1-3 unit(s)

Individual work by arrangement.

Prerequisite(s): 11 units of upper division Japanese (or equivalent with grade of "B") and instructor consent.

Grading: Credit/No Credit

JPN 192 - International Program Studies

1-14 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Jewish Studies

JWSS 1A - Elementary Hebrew

4 unit(s)

Basic skills and structure of the Hebrew language, in the context of the history and range of cultural expressions in the Hebrew speaking world.

Satisfies C2: Humanities.

Grading: Letter Graded.

Cross-listed with HEBR 1A / RELS 1A. Department of World Languages and Literatures is responsible for scheduling.

JWSS 1B - Elementary Hebrew

4 unit(s)

Second level of Elementary Hebrew, further developing students' proficiency in reading, writing, speaking, and listening in Modern Hebrew, delving deeper into the context of the history and range of cultural expressions in the Hebrew speaking world.

Satisfies C2: Humanities.

Prerequisite(s): HEBR 1A (or equivalent).

Grading: Letter Graded.

Cross-listed with HEBR 1B / RELS 1B. World Languages and Literatures is responsible for scheduling.

JWSS 15A - Intermediate Hebrew

3 unit(s)

Developing speaking skills.

Prerequisite(s): HEBR 1A and HEBR 1B (or equivalent).

Grading: Letter Graded.

Cross-listed with HEBR 15A / RELS 15A. World Languages and Literatures is responsible for scheduling.

JWSS 15B - Intermediate Hebrew

3 unit(s)

Developing speaking skills.

Prerequisite(s): HEBR 1A and HEBR 1B (or equivalent).

Grading: Letter Graded.

Cross-listed with HEBR 15B / RELS 15B. World Languages and Literatures is responsible for scheduling.

JWSS 90 - Bible History and Literature

3 unit(s)

The Bible in context of its history, literary sources and as a reflection of Jewish and Christian traditions. Motifs and themes in light of their original audience, historic usage and contemporary development.

Satisfies C2: Humanities.

Grading: Letter Graded

Cross-listed with HUM 90 / MDES 90 / RELS 90. Humanities is responsible for scheduling.

JWSS 102A - Advanced Hebrew

3 unit(s)

Readings, grammar, discussion and composition.

Prerequisite(s): Four semesters of college Hebrew (or equivalent).

Grading: Letter Graded

Cross-listed with HEBR 102A / RELS 102A. World Languages and Literatures is responsible for scheduling.

JWSS 102B - Advanced Hebrew

3 unit(s)

Readings, grammar, discussion and composition.

Prerequisite(s): 12 units of college Hebrew (or equivalent).

Grading: Letter Graded

Cross-listed with HEBR 102B / RELS 102B. World Languages and Literatures is responsible for scheduling.

JWSS 111 - Special Topics in Jewish Studies

3 unit(s)

Special Topics in Jewish Studies. Topics vary and will be announced each semester. Repeatable for credit when topic changes.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with HIST 111 / HUM 111 / RELS 111. History is responsible for scheduling.

JWSS 118 - Yiddish History and Culture

3 unit(s)

Introduces Yiddish as a lens through which to explore some of the major historical trends in Eastern European and American Jewish life, such as Hasidism, the Jewish Enlightenment (Haskalah), nationalism, immigration, secularization, and antisemitism.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): Students are strongly encouraged to satisfy GE Areas R, S, and V with courses from departments other than the major department.

Cross-listed with HIST 118. History is responsible for scheduling.

JWSS 126 - Holocaust Literature

3 unit(s)

Survey of literature written by survivors or witnesses of the Holocaust, the destruction of European Jewry during World War II, focusing upon diaries, memoirs, fiction, and occasionally poetry and drama. Writers may include Elie Wiesel, Primo Levi, Anne Frank, Charlotte Delbo.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENGL 126 / FORL 126 / HUM 126. English and Comparative Literature is responsible for scheduling.

JWSS 136 - World Jewish History

3 unit(s)

History of the Jewish people and Judaism around the world, from their origins to the present. Covers Jewish development, both as an ethnic group and as a religion, with an emphasis on the diverse ways in which Jews responded to their circumstances. A major focus is the effect of Judaism and the Jews on other cultures and societies.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing; Completion of, or co-registration in, 100W is strongly recommended (HIST 100W preferred).

Grading: Letter Graded.

Cross-listed with HIST 136 History is responsible for scheduling.

JWSS 144 - Middle Eastern Politics

4 unit(s)

Study of unfolding events in the Middle East. Themes include: the failure of democratic movements, nuclear proliferation and terrorism, US foreign policy towards the region, the Israel-Palestine conflict, urbanization, gender and human rights.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with MDES 144 / POLS 144. Political Science is responsible for scheduling.

JWSS 180 - Individual Studies

1-3 unit(s)

Directed studies in relevant fields not covered by courses offered.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Instructor consent and program coordinator.

Grading: Credit/No Credit

Journalism

JOUR 50 - Navigating the News

3 unit(s)

Introduction to different forms of news media we consume to become informed and engaged citizens, and how media shape our world. Development of skills to critically evaluate the credibility of news sources, distinguish between real and fake news, and examine contemporary news events and news media coverage in cultural, historical, environmental, and spatial contexts.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Sustainability Related - SDG 4: Quality Education

JOUR 61 - Writing for Print, Electronic and Online Media

3 unit(s)

Introduction to writing for media --newspapers, magazines, electronic and the Internet--as well as producing content for multimedia distribution in a converged media environment. Emphasis on how different media require different writing styles and content.

Repeatable for the English and Spanish version.

Prerequisite(s): ENGL 1A and ENGL 2.

Grading: Letter Graded

Note(s): Writing for Spanish Media Topic: Suggested Spanish requirements include AP Spanish 4 or 5,

and/or SPAN 1A and/or SPAN 1B. Students can choose the language they want to write, with mentorship for those wishing to improve or learn to prepare their stories in Spanish. Students will be introduced to Spanish language media, issues and related culture. Non-bilingual students will be encouraged to participate in exercises that will help them translate or write news stories in Spanish. Native Spanish speakers are strongly encouraged to enroll in the class, but all students are invited to learn how to write and report for Spanish media at their own pace.

JOUR 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Letter Graded

JOUR 95 - Beginning Digital News Photography

3 unit(s)

Basic introduction to news photography and photojournalism field. Includes camera use -- composition, aperture, shutter speed and lens selection -- and processing for print or electronic media using PhotoShop. Emphasis on technical aspects of digital news photography and storytelling with photographs.

Prerequisite(s): Writing Enrollment Category W-I or W-II or completion of ENGL 1AF with grade of CR.

Grading: Letter Graded

JOUR 130 - Student Media Apprentice

3 unit(s)

A deep dive into a pool of multimedia concepts, techniques and skills, while working as a student media apprentice reporter. Includes fundamentals of reporting, writing, shooting and editing, as well as storytelling in video, audio and text with photo.

Prerequisite(s): JOUR 61

Grading: Letter Graded

JOUR 132 - Magazine Reporting, Print and Online

3 unit(s)

Reporting and writing of feature stories for magazines, print and online. Develops expertise in reaching a targeted audience with words and images. While the prerequisite, JOUR 61, teaches breaking news writing, this course explores longer, deeper forms.

Prerequisite(s): JOUR 61

Grading: Letter Graded

JOUR 133 - Editing and News Management

3 unit(s)

Media Lab. for the editor serving as wordsmith and coach, a hands-on approach to copy editing and headline writing for online and print media. Students work as editors for media lab publications.

Prerequisite(s): JOUR 61 or instructor consent.

Grading: Letter Graded

JOUR 136 - Newspaper and Magazine Design

3 unit(s)

Principles of newspaper and magazine design--news judgment, story and headline hierarchy, typography and meaningful visual storytelling through use of photos/art. Practice in creating newspaper pages and magazine layouts and cover designs.

Prerequisite(s): JOUR 61, JOUR 133 or instructor consent.

Grading: Letter Graded

JOUR 137 - Reviewing the Arts

3 unit(s)

Students explore the arts while learning to forge their opinions into reasoned critical journalistic reviews. Students will attend performances and exhibits, meet and interview artists and professional critics, read selected writings in criticism and aesthetics, and learn to support their insightful opinions with evidence.

Prerequisite(s): JOUR 61

Grading: Letter Graded

JOUR 138 - Sports Journalism Investigation

3 unit(s)

Course prepares sports journalists to develop their investigative and technical skills in audio, video, photography, and sports writing across traditional and new media platforms. Students work collaboratively across media to publish sports features weekly. Diversity/inclusion emphasized.

Corequisite(s): JOUR 61 or consent of instructor

Grading: Letter Graded

JOUR 140A - Student Media Production: Update News

1-3 unit(s)

Students report, write, shoot, edit, anchor and produce Update News. Course is run as a working newsroom where accuracy, quality and deadlines are paramount. The various student media work in a spirit of convergence and collaboration.

Activity 6 hours.

Course is repeatable for up to 12 units of credit.

Prerequisite(s): JOUR 61.

Grading: Letter Graded.

JOUR 140AS - Student Media Production in Spanish

3 unit(s)

Students report, write, shoot, edit, anchor and produce 'El Espartano Noticias'. Course is run as a working newsroom where accuracy, quality and deadlines are paramount. Students work in a spirit of convergence and collaboration. Taught in Spanish.

May be repeated for up to 6 units of credit for a major and an additional 3 units can be counted for a minor.

Prerequisite(s): JOUR 61

Grading: Letter Graded.

High Impact Practice: Collaborative Assignment/Project.

JOUR 140B - Student Media Production: Spartan Daily

1-3 unit(s)

A team of reporters, photographers and editors produce student media content in the Spartan Daily. Course is run as a working newsroom where accuracy, quality and deadlines are paramount. Various student media work in collaboration.

Course may be repeated for up to 12 units of credit.

Prerequisite(s): JOUR 61

Grading: Letter Graded.

JOUR 140C - Student Media Production: The Spear

3 unit(s)

Students report, write, shoot, edit, anchor and produce the sports program and/or magazine, The Spear. Course is run as a working newsroom where accuracy, quality and deadlines are paramount. Student media work in collaboration.

Course may be repeated for up to 12 units of credit.

Prerequisite(s): JOUR 61

Grading: Letter Graded.

JOUR 140D - Student Media Production: Magazine

3 unit(s)

A team of reporters, photographers and editors produce a magazine in conjunction with supervising editors in JOUR 150. Course is run as a working magazine office where accuracy, quality and deadlines are paramount. Various student media work in collaboration.

Activity 6 hrs.

Course may be repeated for up to 12 units of credit.

Prerequisite(s): JOUR 61 and JOUR 132.

Grading: Letter Graded.

JOUR 150 - News Media Management

3 unit(s)

Capstone course in which students manage media, by overseeing the operation of publications, broadcasts and digital platforms. Students apply for management positions. Repeatable for credit.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): JOUR 61 and JOUR 140A, or JOUR 140B, or JOUR 140C, or JOUR 140D

Grading: Letter Graded

JOUR 160 - Environmental Journalism

3 unit(s)

Course will introduce students to environmental journalism and distinguish the roles and differences between journalism and communications, in which the student will learn to better understand the watchdog role of the journalist to report the facts within a larger social, political and economic context so that the public is presented with accurate, credible and timely information on science and its implications for sustainability.

Satisfies SJSU Studies R: Earth, Environment & Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Sustainability Related - SDG 13: Climate Action and SDG 16: Peace, Justice, and Strong Institutions

JOUR 167 - Television News Magazine

3 unit(s)

Course dedicated to quality, long-form visual reporting, told through the half-hour show, Equal Time. Each episode focuses on a specific topic in depth. Stories center around news important to Californians, and air on the PBS-TV station, KQED Silicon Valley. The show contains taped packages and live-to-tape roundtable discussions. Students are responsible for aspects of show creation, including reporting, writing, shooting, editing and producing.

Repeatable for up to 6 units when topic changes.

Prerequisite(s): JOUR 61, JOUR 140A; or instructor approval.

Grading: Letter Graded

JOUR 176A - Documentary Unit I - Short Form Feature Production

3 unit(s)

Explores the history and methods of producing a short-form non-fiction visual documentary. Students learn basic camera production techniques to execute their proposals. Students will be introduced to studio lighting, sound and post production skills. Diversity themes emphasized.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 10: Reduced Inequalities

JOUR 176B - Documentary Unit II - Long Form/Series Production

3 unit(s)

Focuses on the making of a long-form documentary production or a documentary feature series (consisting of 2 or more short segments). Students are introduced to field techniques and formats for extended documentary production. Diversity themes emphasized.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

JOUR 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Justice Studies

JS 10 - Introduction to Justice Studies

3 unit(s)

Historical and philosophical development of the justice system. Description, analysis and evaluation of criminal justice agencies. Relationship between theory and practice.

Grading: Letter Graded

JS 12 - Introduction to Legal Studies

3 unit(s)

The course presents historical and modern perspectives of the theories and structures of law, and provides an overview of the economic and sociological challenges to law making. This course also examines the nexus between law, social change, and dispute resolution.

Grading: Letter Graded

JS 15 - Introductory Statistics in Justice Studies

3 unit(s)

Introduction to measures of central tendency, variation, correlation and regression, probability, estimation and hypothesis testing as used in Justice Studies.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Mathematics Enrollment Category M-I or M-II or M-III; for Category IV, completion of a GE Area B4 course with a grade of C- or better.

Grading: Letter Graded

JS 25 - Introduction to Human Rights and Justice

3 unit(s)

This course is a lower division introduction to the history of human rights as a concept and body of international law, and to the complicated role of human rights in contemporary social justice campaigns.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Letter Graded

JS 100W - Writing Workshop

3 unit(s)

Development of advanced communication skills, both written and oral. Emphasis on writing formats used by criminal justice professionals. A scholarly paper, written in APA format and informed by research, will be required.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Major: Justice Studies or Forensic Science.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

JS 101 - Critical Issues and Ideas in Justice

3 unit(s)

Interdisciplinary, historical and comparative examination of justice concepts and controversies, including the

state's role in promoting justice and perpetuating injustice; legitimate versus illegitimate violence; human rights, stateless persons, and the international community; the relationship between social justice and criminal justice.

Course is repeatable for up to 3 units.

Prerequisite(s): Upper Division Standing; JS 10, JS 12, JS 25 or FS 11 or equivalent.

Corequisite(s): JS 100W; Justice Studies Minors, Legal Studies Minors: Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 102 - Police and Society

3 unit(s)

A multidisciplinary study of law enforcement from the early 1800's to the present. Focus on significant studies in relation to the role of police and analysis of current models and practices.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 103 - Courts and Society

3 unit(s)

Structure and functions of the court system. Emphasizes attorneys' and judges' roles and the court process. Examination of federal and state legislative, executive and judicial branch actions, including Supreme Court decisions in civil and criminal cases.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): A grade of "C" or better is required for graduation.

JS 104 - Penal Politics & Institutions

3 unit(s)

Interdisciplinary examination of issues of race, class, gender, ethnicity, economy, and culture as it relates to punishment, the penal process, and social control.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 107 - Justice Management and Ethics

3 unit(s)

The theory and practice of managing justice system agencies, including organizational change and contemporary issues. In-depth examination of ethical challenges in managing justice agencies, and strategies for ensuring ethical practices.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 114 - Research Methods in Justice Studies

3 unit(s)

Introduction to quantitative research methods used in Justice Studies. Includes relationship of theory to empirical evidence; logic underlying methods of inquiry; ethics in conducting empirical research; and methodological design, operationalization, and data analysis.

Prerequisite(s): JS 10, JS 12, JS 25, or FS 11 with a grade of "C" or better; JS 15 or STAT 95 or equivalent with a grade of "C" or better; JS 100W with a grade of "C" or better. Justice Studies Minors: Any 100W and Upper Division Standing.

Grading: Letter Graded

Note(s): Restricted to JS majors and minors and FS majors. Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 117 - Qualitative Research Methods

3 unit(s)

Introduction to qualitative research methods used in Justice Studies. Includes relationship of empirical evidence to theory, ethics in conducting empirical research, methodological design, interviewing techniques, field methods, participant observation, and content analysis.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 121 - Media and Justice

3 unit(s)

This course is an interdisciplinary and comparative media examination of justice concepts and controversies, including forms of violence, human rights, undocumented persons, the state's role in promoting criminalization and social inequality, and the need for social justice and media reform.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 122 - Drugs and Society

3 unit(s)

Examines the physiological effects of psychoactive drugs; history of legal and illegal drug use; causes and rates of use and addiction; drugs in the media; drug-related crime and violence; criminalization, decriminalization, legalization, harm reduction; drug courts; drug treatment.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 123 - Terrorism, Intelligence, and Security

3 unit(s)

Examination of terrorist organizations and activities, definitions of terrorism, and social and political consequences of terrorism. Includes policy responses to terrorism, including roles of intelligence and security agencies, and impacts on law, rights and liberties.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 127 - Immigration and Justice

3 unit(s)

Interdisciplinary analysis of cultural, social and political implications of transnational migrations and their historical and present influences on US culture. Emphasis on issues of social justice and human rights related to contemporary migratory movements.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 8: Decent Work and Economic Growth

JS 128 - Punishment, Culture and Society

3 unit(s)

Critical analysis of the cultural, political and economic dimensions of penal politics in contemporary American society, with particular reference to the relationships between criminal justice and social justice. Emphasis on issues of racial, economic, and gender inequality.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 129 - International Crime and Deviance

3 unit(s)

This course offers an international perspective on violence. This course analyzes transnational crime and deviance trends, their causes, as well as organizational responses. Topics discussed in this class include international drug markets, sexual commerce, child soldiers, and terrorism.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 8: Decent Work and Economic Growth

JS 130 - Sexuality & Justice

3 unit(s)

Surveys the relationship between sexuality and social and criminal justice. Students explore the nature and extent of sexual offenses against adults and children. A critical examination of recent public policies aimed at managing sexual aggression is included.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 131 - Crisis Intervention, Mediation and Restorative Justice

3 unit(s)

Review of theory, research and practical skill development in communication and problem resolution strategies using techniques of crisis intervention, mediation and restorative justice in community policing, family court, dependency court and juvenile justice settings.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 132 - Race, Gender, Inequality and the Law

3 unit(s)

History of legal issues and individual and institutional discrimination of women, ethnic/cultural and religious minorities, LGBTQ people and the disabled in education, employment, criminal justice and the family. Solutions for structured inequality in the U.S.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Course is repeatable for up to 3 units.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 10: Reduced Inequalities

JS 136 - Family and Community Violence

3 unit(s)

Examines abusive relationships and responsive community and justice system policy and preventive interventions. Topics include child abuse, neglect, gang and hate crimes, rape, marital violence and elder abuse.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Course is repeatable for up to 3 units.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 137 - Collaborative Response to Family Violence

3 unit(s)

Employs an ecological framework to explore the scope, effects and response to family violence by diverse services and systems. Students are introduced to theory and practice of interdisciplinary collaboration and how it applies to respond more effectively to family violence.

Pre/Corequisite(s): Any 100W. Completion of JS 136 or previous courses in family violence is suggested but not required.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 140 - Record Clearance Project

3 unit(s)

RCP teaches students to give community education presentations and advise clients regarding court procedures to clear criminal convictions. Students learn legal interviewing, counseling, ethics, reading rap sheets, performing legal research and writing, court interpreting and related skills.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 141 - Record Clearance Project Representation

3 unit(s)

Record Clearance Project Representation teaches students to assist clients in preparing and filing petitions to clear criminal convictions in court, and related tasks. Under attorney supervision, students represent between two to four clients.

Prerequisite(s): JS 140 and instructor consent.

Grading: Credit/No Credit

Note(s): JS 141 fulfills the internship requirement for the Justice Studies major. Students can enroll in JS 141 and JS 142 concurrently.

JS 142 - Record Clearance Project - Advanced Study and Community Involvement

3 unit(s)

Record Clearance Project - Advanced Study and Community Involvement involves assisting RCP mentors (who are former clients) in working with clients who are released from custody, mentoring RCP students in client interviews, coordinating project tasks and events, collecting data from former clients and students, helping with RCP community involvement, and assisting in other tasks.

Prerequisite(s): JS 140 and instructor consent.

Grading: Credit/No Credit

Note(s): JS 142 fulfills the internship requirement for the Justice Studies major. Students can enroll in JS 141 and JS 142 concurrently.

JS 143 - Criminal Evidence and Procedure

3 unit(s)

Origin, development, philosophy and constitutional basis of evidence; administrative and judicial rules and procedures that govern admissibility; examination of judicial decisions interpreting individual rights; exploration of process by which attorneys introduce evidence as proof or exculpation of crime.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 144 - Criminal Law

3 unit(s)

Historical development of philosophy of law and constitutional provisions, legal definitions, classifications of crime, case law, methodology and concepts of criminal law as a social force.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 145 - White Collar Crime

3 unit(s)

Growth and development of white collar crime in the United States: crimes at the workplace, computer fraud, swindles, embezzlement, bribery and graft at the corporate and governmental levels.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): A grade of "C" or better is required for Justice Studies majors.

JS 146 - Guns and the Law

3 unit(s)

Socio-historical examination of the legal regulation of guns in the United States. Topics include prevalence of gun ownership, gun use, and gun-related violence; Constitutional foundations of gun ownership; and policy debates surrounding gun rights and gun control.

Grading: Letter Graded

JS 150 - Gender and Crime

3 unit(s)

Analysis of gender and its influence upon criminal participation and victimization, treatment in the criminal justice system, and those working in the criminal justice fields. Emphasis on women's experiences.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 5: Gender Equality

JS 151 - Criminological Theory

3 unit(s)

Analysis of the nature and extent of crime, including causation and prevention. Descriptions of offenses, criminal typologies and victim surveys. Evaluation of various control and prevention strategies.

Prerequisite(s): JS 10, JS 12, JS 25 or FS 11.

Pre/Corequisite(s): JS 100W. Justice Studies Minors: Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 152 - Juvenile Delinquency & Justice

3 unit(s)

History, theory and functions of the juvenile justice system. The legal processes for delinquent minors, status offenders and dependent children, including intake, detention, adjudication and disposition. Current legal issues and debate.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 153 - Crime and Justice Across the Life Course

3 unit(s)

Explores how crime and justice are experienced by individuals over time. The nature and extent of offending and victimization at various ages across the life course is examined. A critical consideration of the criminal career paradigm is also provided.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 155 - Victimology

3 unit(s)

Examination of the relationship between victim and offender; the behavior and attitudes of family, society and justice system toward the victim; nature and extent of loss, injury and damage to the victim.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 156 - Gangs, Criminal Syndicates & Justice

3 unit(s)

A socio/historical examination of the emergence, evolution, persistence, activities and social structure of gangs and mobs, the effects of social factors, e.g., politics, law, technology and the economy, and consequences for communities and social institutions.

Pre/Corequisite(s): Any 100w

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 157 - Deviance and Justice

3 unit(s)

This course examines various areas of norm violations and rule-breaking behaviors including, alcohol and drug use/abuse, criminal violence, corporate deviance, gang violence, and sexual deviance, child abuse, hate crime, mental illness, computer piracy and evaluates justice policies.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 158 - The Prison Community

3 unit(s)

Analysis of formal and informal systems of organization and interaction among incarcerated people and staff. Effects of the social structure and external system on the organization of the prison community.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 161 - Introduction to Cybercrime

3 unit(s)

Introduces students to the growing legal, technical, and social issues surrounding crimes committed in cyberspace or assisted by computers. Discusses the nature of cybercrime from an international perspective and how the borderless nature of cybercrime impacts regulation and enforcement.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 171 - Human Rights and Justice

3 unit(s)

Interdisciplinary exploration of human rights instruments, institutions, and notable human rights campaigns. The historical development of human rights and contemporary threats to the realization of fundamental dignity for humans and non-humans will also be explored.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 172 - Human Trafficking and Modern Day Slavery

3 unit(s)

Examines the social, cultural, and historical dimensions of global human trafficking and modern-day slavery, with special attention to the efficacy, effectiveness, and unintended consequences of various anti-trafficking policies from around the world, including the United States.

Pre/Corequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

Sustainability Focused - SDG 8: Decent Work and Economic Growth

JS 173 - Advancing Human Rights Through Diversity, Equity and Inclusion

3 unit(s)

Examination of approaches to put theory into practice to leverage the concepts of diversity, equity and inclusion to advance human rights at the institutional, organizational and societal level. Exploration of policy and practice solutions from across the world to advance anti-racism and more just societies.

Prerequisite(s): JS 100W with a grade of "C" or better.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 174 - Reproductive Justice

3 unit(s)

Draws on various theoretical and analytic tools to examine the ways that reproduction is entangled with broader justice issues such as racism, sexism, immigration, incarceration, medicine, civil rights, political economy, population control, and environmentalism.

Prerequisite(s): Any 100W.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better to fulfill Justice Studies major requirements.

JS 179 - Human Rights Practicum and Seminar

3 unit(s)

Complete field experience in human rights advocacy/reporting/organizing while surveying recent human rights scholarship in seminar format.

Prerequisite(s): JS 25, any 100W.

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

JS 180 - Individual Studies

1-3 unit(s)

Individual work on special topics by arrangement.

Prerequisite(s): Upper division standing. Not available to Open University Students.

Grading: Credit/No Credit

JS 181 - Internship: Justice Studies

1-6 unit(s)

The internship is designed to provide broad exposure to the requirements and operations of a variety of agencies and organizations that range from a criminal justice to social justice focus, including courts, law enforcement agencies, law offices, nonprofit organizations and community-based programs.

Course is repeatable for up to 6 units.

Prerequisite(s): Upper division standing; Justice Studies or Forensic Science major; JS 100W with a "C" or

better; 2.0 GPA; Department Consent, No Open University.

Grading: Credit/No Credit

Note(s): Students can take up to 3 additional units as JS electives.

JS 182 - Themis: Journal of Justice Studies and Forensic Science

3 unit(s)

Themis is a student-run, professional-quality academic journal, publishing original SJSU student research in a broad range of justice-related and forensic science topics. Associate and managing student editors critically evaluate and select journal submissions and work with authors throughout the editing process. Each volume is published in hardcopy and online at Scholarworks at the end of spring semester.

Course may be repeated for up to 6 units with major advisor approval.

Prerequisite(s): Completion of any 100W, approval of managing editor(s) and/or faculty advisor.

Grading: Credit/No Credit

Note(s): Offered spring semester only

JS 183 - Ethics in Criminal Justice

3 unit(s)

In-depth examination of ethical issues in policing, forensic science, and the judicial system. Rhetorical and critical analyses of opposing arguments in justice studies from a variety of ethical perspectives.

Prerequisite(s): JS 10, JS 25 or FS 11 or equivalent.

Pre/Corequisite(s): JS 100W or approved substitute.

Grading: Letter Graded.

JS 184 - Directed Reading

1-3 unit(s)

Designed to meet individual needs and interests.

Prerequisite(s): Upper division standing. Not available to Open University Students.

Grading: Credit/No Credit

JS 185 - Special Topics in Law and Justice

3 unit(s)

Range of law and justice issues and topics may be addressed. Content varies by semester. Topics may include international law and globalization, the struggle for justice, human rights, law, inequality and injustice, and others. May be repeated for credit when content changes for a maximum of 9 units.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

JS 185ITL - Justice Studies International Experience

1-9 unit(s)

The goal of this course is to gain insight into systems of criminal and social justice outside of the U.S. Issues of justice are explored, and the role of the student as a global citizen is emphasized. Includes international experiential component through study abroad.

Course may be repeated for credit for up to 9 units.

Grading: Letter Graded

JS 189 - Senior Seminar: Contemporary Problems

3 unit(s)

Identification, discussion and analysis of selected problems in justice studies. A major term paper on a selected topic is required.

Prerequisite(s): Senior standing in final semester; Justice Studies or Forensic Science major; FS 100W or JS 100W and JS 114 with a "C" or better; Department Consent.

Grading: Letter Graded

Note(s): Must achieve a grade of "C" or better is required for Justice Studies majors.

JS 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

JS 201 - Justice and Social Theory

3 unit(s)

Examines classic and contemporary theories of justice, including legal, social, economic and criminal justice and their application to current social issues.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Focused - SDG 10: Reduced Inequalities

JS 202 - Survey of Research Methods

3 unit(s)

Examination of research methods applied to solving problems and resolving issues in justice-related agencies, organizations and processes. Focuses on the application of the scientific method to problem-solving and program evaluation.

Prerequisite(s): STAT 95 or equivalent, JS 114 or equivalent, and graduate standing

Grading: Letter Graded

JS 203 - Seminar in Applied Statistics in Justice

3 unit(s)

An evaluation of specific statistical methods for quantitative and nonquantitative analyses, concentrating on applications and interpretations in justice related settings.

Prerequisite(s): STAT 95 or equivalent, JS 114 or equivalent, and graduate standing

Grading: Letter Graded

JS 204 - Justice Organizations, Ethics & Change

3 unit(s)

An examination of significant organization and management theories, behavioral processes, and organizational change and development.

Prerequisite(s): JS 201 and graduate standing

Grading: Letter Graded

JS 205 - Seminar in Law and Courts

3 unit(s)

Roles of the law in society. Analysis and critique of courts, attorneys, judges and juries; dispute resolution; race, class, sex inequality; law's symbolic functions and unintended consequences; new socio-legal research; and comparative perspectives.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 206 - Seminar in Juvenile Justice

3 unit(s)

Analysis of philosophy, theories, relevant law, research, constitutional issues related to juvenile justice. Structure and purpose of juvenile court proceedings. Minors in criminal and civil court, juvenile corrections, death penalty for juveniles, transfers to adult court, child victims, fetal abuse.

Grading: Letter Graded

JS 207 - Seminar in Qualitative Research Methods

3 unit(s)

Qualitative research methods used in Justice Studies. Includes relationship of empirical evidence to theory, ethics in conducting empirical research, methodological design, interviewing techniques, field methods,

participant observation, and content analysis.

Prerequisite(s): Graduate standing; or instructor permission.

Grading: Letter Graded

JS 208 - Seminar: Punishment & Society

3 unit(s)

Examination of a range of penal ideas and practices; includes historical analysis of punishment, overview of theoretical perspectives and empirical social science research on punishment and alternative sanctions and implications for contemporary penal policy.

Grading: Letter Graded

JS 209 - Seminar in Police and Social Control

3 unit(s)

Critical examination of democratic policing, including internal and external strategies for control and reform. Emphasis on police role in democracy, policy, culture, performance measures for individuals and organizations, and alternative policing methods and policies.

Grading: Letter Graded

JS 211 - Historical Issues in Justice Studies

3 unit(s)

Equips students to do historical research, understand the significance of historical perspectives for contemporary issues, and explore the place of historical obligations and entitlements in theories of justice.

Prerequisite(s): JS 201 and graduate standing

Grading: Letter Graded

JS 212 - Local & Global Perspectives on Human Rights

3 unit(s)

This course is a graduate level exploration of contemporary human rights scholarship and praxis in the United States and in relation to U.S. domestic and foreign policy.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 213 - Seminar in Cybercrime

3 unit(s)

Exploration of the historical and evolving legal, technical, and social issues surrounding crimes committed in cyberspace or aided by technology. Examination of how the borderless nature of cybercrime impacts regulation and enforcement internationally.

Grading: Letter graded.

JS 214 - Seminar: Social Movement, Community Organizing, and Social Justice

3 unit(s)

This course is an exploration of social movement praxis. The class investigates community organizing broadly and discusses the idea of social justice, specifically how it relates to establishing human rights in our communities through the active participation of informed citizens.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 218 - Seminar: Immigration, Law & Justice

3 unit(s)

Graduate level interdisciplinary analysis of the cultural, political and socioeconomic implications of contemporary migratory movements and immigration control policies in the United States, with particular emphasis on notions of international human rights and global justice.

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

JS 220 - Seminar: Criminological Theory

3 unit(s)

A critical review of classical and contemporary theories and research in criminology. Evaluation of contemporary criminal justice and its relationship to theories of criminal behavior.

Grading: Letter Graded

JS 221 - Seminar: Deviance & Social Control

3 unit(s)

This course examines various areas of norm violations and rule-breaking behaviors including, alcohol and drug use/abuse, criminal violence, corporate deviance, gang violence, and sexual deviance, child abuse, hate crime, mental illness, computer piracy and evaluates justice policies.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

JS 223 - Seminar: Comparative Criminology & Criminal Justice

3 unit(s)

This course provides a comparative perspective on crime, violence and punishment in contemporary global societies. The course analyzes transnational trends in crime, as well as organizational responses to criminality. Topics include international drug markets, sexual commerce, child soldiers, and terrorism.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

JS 224 - Seminar in Reproductive Justice

3 unit(s)

Interdisciplinary exploration of the issues included in the umbrella of the Reproductive Justice framework, including an examination of institutions, laws and policies, historical accounts of these issues, and contemporary threats to reproductive justice.

Grading: Letter graded.

JS 265 - Comparative Criminal Justice Systems

3 unit(s)

Theory-based comparative analysis of US criminal justice system with criminal justice systems around the world. Course focuses on legal traditions, policing, courts and corrections, with emphasis on the role of geographical, historical and cultural traditions in shaping criminal justice.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

JS 266 - Applied Research Methods and Statistics

3 unit(s)

This course introduces research concepts, methodology, design, qualitative and quantitative data analysis, interpretation, and SPSS use for understanding crime and evaluating criminal justice issues, policies, and agency practices.

Prerequisite(s): JS 114 or equivalent

Grading: Letter Graded

JS 267 - Crime and Gender Around the World

3 unit(s)

This course is designed to examine the growing body of literature that deals with women's experiences about crime and justice to understand the impact of gendered relations on criminal behavior and justice outcomes.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

JS 268 - Immigration and International Law

3 unit(s)

This online course provides an overview of the United States legislation and policy relating to immigration and explores the opportunities and challenges facing policy-makers in the context of domestic law and policy, as well as global norms and regimes.

Grading: Letter Graded

JS 269 - Cyber Forensics

3 unit(s)

This online course teaches procedures for identification, preservation and extraction of electronic evidence. Public and private sector responses to cyber security issues in national and international contexts are discussed.

Grading: Letter Graded

JS 270A - Global Terrorism

3 unit(s)

This online course examines terrorism and the role it plays in today's complex world as well as the theory and practice of international terrorism.

Grading: Letter Graded

JS 271 - International Human Rights

3 unit(s)

This online course focuses on the politics and history of the conception, protection, and violation of human rights in global perspectives as well as the examination of the practical applications of the theory.

Grading: Letter Graded

JS 272 - Policing in Global Contexts

3 unit(s)

This online course examines policing from a global perspective. The objective of this course is to orient students as to how police organizations operate in different parts of the world in terms organization, crime control, and crime prevention.

Grading: Letter Graded

JS 273 - International Criminology and Juvenile Delinquency

3 unit(s)

This online course will examine: (1) issues fundamental to criminological and juvenile delinquency research and practical applications; (2) the current and emerging national/international crime and delinquency issues; and (3) criminal and juvenile justice policies adopted by different countries.

Grading: Letter Graded

JS 274 - Applied Project

3 unit(s)

For this project, a substantial paper of a justice agency program, justice policy, and/or organizational issue is required. The contents will be determined by the student in consultation with the instructor, with whom the student meets regularly for supervision.

Grading: Credit/No Credit/Incomplete.

JS 281 - Justice Practicum

1-3 unit(s)

Supervised placement in a justice organization or agency in a position emphasizing analytical and research skills and/or managerial responsibilities. Culminating research or policy paper required.

Prerequisite(s): Graduate standing and graduate coordinator consent.

Grading: Credit/No Credit

JS 288 - Seminar in Special Topics

3 unit(s)

In-depth exploration and analysis of selected justice-related topic. Course will consider relevant theories, issues, and research on the selected topic.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

JS 297 - Program Evaluation Project

3 unit(s)

A substantial paper/mock evaluation of a justice agency program, justice policy, or organizational issue.

Prerequisite(s): JS 201, JS 202, and JS 203. Not available to Open University students.

Grading: Credit/No Credit/RP.

JS 298 - Special Study

1-3 unit(s)

Advanced individual research not covered in a regular course and not related to the project or the thesis topic.

Course may be repeated for credit for up to 18 units.

Prerequisite(s): Instructor and Grad Coordinator permission. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

JS 299 - Master's Thesis

3-6 unit(s)

Six units are required to complete the thesis and oral defense of the thesis. Required for Plan A. Must be repeated for a total of 6 semester units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Advancement to candidacy for the MS degree and thesis chair consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

JS 1290R - Thesis/Project Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Mandatory Credit/No Credit/RP

Kinesiology

KIN 68 - Visual Representations of Sport in Popular Culture

3 unit(s)

Critical examination of visual representations of sport in popular culture. Facilitate a deeper understanding and appreciation of the artistic qualities that exemplify works of human creativity as related to sport.

Satisfies C1: Arts.

Grading: Letter Graded

KIN 69 - Stress Management: A Multidisciplinary Perspective

3 unit(s)

The stress process and its relation to health, disease, lifestyle, and the sociocultural environment. Physiological, psychological, sociological, and environmental parameters of stress across the lifespan, emphasizing university resources and stress management strategies to enhance academic, personal, and social development.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

KIN 70 - Introduction to Kinesiology

3 unit(s)

Explores the broad spectrum of kinesiology as an academic discipline, fundamental concepts and meaning of movement/physical activity, diversity of humans as moving beings, professional/career options, current issues, personal characteristics/professional responsibilities, Kinesiology at SJSU; initiates professional portfolio.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Grading: Letter Graded

Note(s): Required for KIN majors and minors only.

KIN 80 - Individual Activity Program Studies

1 unit(s)

Through engagement in projects, assistance with teaching, and/or independent study related to a class in the Kinesiology physical activity program, further develops sport/fitness skills and knowledge.

Activity 2 hours.

Repeatable 3 times for a total of 3 units.

Prerequisite(s): Instructor consent and overall GPA of 2.0

Grading: Credit/No Credit

KIN 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Satisfies PE: Physical Education

Grading: Mixed Grading

KIN 100W - Writing Workshop

3 unit(s)

Advanced skills in writing. Development of writing style and creation of organized, persuasive and analytical prose. Generalized and specialized forms of writing.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): KIN 70 for major/minors only or instructor consent. A3 or equivalent second semester composition course (with a grade of C- or better); Completion of core GE, and upper division standing. Allowed Declared Major/Minor: Kinesiology. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

KIN 101 - Sport in America

3 unit(s)

The role of sport (recreational and professional) as a social, political and economic institution in American society. Critical examination of contemporary issues affecting sport and sport involvement by diverse cultural groups within American society.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Not open to Kinesiology majors for major/minor credit.

KIN 105 - Water Safety Instructor's Course

2 unit(s)

Designed to teach the basic concepts, skills and knowledge for successful teaching in the American Red Cross aquatics program. The content and requirements are in accordance with the American Red Cross and the criterion set forth by the organization.

Misc/Lab: Lecture 1 hour/activity 2 hours.

Prerequisite(s): Minimum age of 18.

Grading: Letter Graded

KIN 106 - Advanced SCUBA and Aquatic Technology

3 unit(s)

Underwater navigation, light salvage, searches, biological sampling, communications, weightless simulations, construction problem solving and lighting.

Misc/Lab: Lecture 1 hour/activity 4 hours.

Satisfies PE: Physical Education

Prerequisite(s): NAUI SCUBA certification (or equivalent).

Grading: Letter Graded

KIN 107 - Adapted Aquatics

2 unit(s)

Theories, techniques and practices in the instruction of persons with disabilities as they function in the aquatic environment.

Lecture 1 hour/Lab 2 hours.

Prerequisite(s): KIN 70 and KIN 156 for Kinesiology majors/minors only or instructor consent; passage of swim skills component required (must be able to swim 100 yards without stopping) or demonstrated by completing KIN 2A or KIN 105.

Grading: Letter Graded

KIN 108 - Adapted Physical Activity for Young Adults with Disabilities

2 unit(s)

Theories, techniques, and practices in the design of physical activity promotion for postsecondary transition students with disabilities.

Lecture 1 hour/Lab 2 hours.

Prerequisite(s): KIN 70 and KIN 156 for majors/minors only or instructor consent.

Grading: Letter Graded

KIN 111 - Sport & Movement in a Global Context

3 unit(s)

Human expression through sport, games, and movement in cultures outside the US, and how those expressions have changed over time. Exploration of how sporting traditions in cultures outside the US have influenced US culture and society.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

KIN 111ITL - Sport & Movement in a Global Context: International Experience

3 unit(s)

Human expression through sport, games, and movement in cultures outside the U.S. and how those expressions have changed over time. Exploration of how sporting traditions outside the U.S. have influenced US culture and society.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

KIN 145A - Physical Activity for Older Adults

3 unit(s)

Analyses of development and implementation processes of exercise programs for older adults.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): KIN 70 or instructor consent.

Grading: Letter Graded

KIN 146 - Introduction to Exercise Technology

3 unit(s)

Introduction to the topic of exercise technology and how technologies can be used to manage physical activity, monitor health and support pedagogical practices. Exploration of the potential benefits and risks associated with new technologies.

Prerequisite(s): KIN 70; Completion of KIN 100W is strongly recommended.

Grading: Letter graded.

KIN 147 - Biomechanical Assessment of Movement

3 unit(s)

This class is designed to assist the student in becoming familiar and proficient with the Biomechanical methods and equipment for assessing human movement performance characteristics with the following goals: improving movement effectiveness, preventing injuries, and assessing rehabilitation progress.

Misc/Lab: Lecture 3 hours/Lab 9 hours

Prerequisite(s): KIN 158

Grading: Letter Graded

KIN 149 - Child Health and Activity

3 unit(s)

Explores concepts, frameworks, and national standards regarding children's health and physical education using an interdisciplinary curriculum. Special attention is given to factors that influence children's health and wellness, safety and prevention, motor skill development, and lifelong healthy practices.

Prerequisite(s): CHAD 60 or CHAD 70.

Grading: Letter Graded

Cross-listed with CHAD 149. Child and Adolescent Development is responsible for scheduling.

KIN 151 - Sports and Fitness Marketing

3 unit(s)

Course is designed to apply marketing principles and processes to the sport and fitness industry. Content will focus on the sport and fitness product, consumer behavior, consumer satisfaction/dissatisfaction, and the customer experience in sport and fitness organizations.

Prerequisite(s): KIN 70

Grading: Letter Graded

KIN 152 - Theory of Sport and Fitness Management

3 unit(s)

Basic theory of sport management. Topics include sport management and organizational skills; sport marketing and sales; sport communication; sport finance, economics, law and governance.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent.

Grading: Letter Graded

KIN 153 - Sport Facility and Event Management

3 unit(s)

Provide students with the skills necessary to effectively manage sport and fitness facilities and events.

Prerequisite(s): KIN 70; and KIN 152 for sports management specialization. Open only to declared Kinesiology majors/minors, or instructor consent.

Grading: Letter Graded

KIN 154B - ECG Interpretations and "Graded" Exercise Testing

3 unit(s)

Theoretical background and practical proficiency in the methods and instruments of electrocardiogram interpretations and "Graded" exercise testing.

Lecture 2 hours/activity 2 hours.

Prerequisite(s): KIN 70 (or equivalent) for majors/minors only or instructor consent; KIN 70; KIN 155 with grades of 'C-' or better in each.

Grading: Letter Graded

KIN 155 - Exercise Physiology

3 unit(s)

Physiological responses and adaptations of the human organism to physical activity.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): KIN 70; BIOL 66 and CHEM 30A with a grade of 'C-' or better in each; approved GE Math Concept course. Open only to declared KIN majors/minors, or instructor consent.

Grading: Letter Graded

KIN 156 - Introduction to Adapted Physical Activity

3 unit(s)

Focus on attitude change as well as knowledge, comprehension and application of human movement principles related to individuals with disabling conditions.

Lecture 2 hours/Lab 2 hours.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent.

Grading: Letter Graded

KIN 157 - Physiological Assessment

3 unit(s)

Use of exercise physiology instrumentation to assess physiological characteristics of human performance, interpret results, and implement corrective strategies, when appropriate.

Lecture 3 hours/Lab 6 hours.

Prerequisite(s): CHEM 30A, GE Area B4, BIOL 66, KIN 70 (C- or better grade), KIN 155 (C- or better grade)

Grading: Letter Graded.

KIN 158 - Biomechanics

3 unit(s)

Relationship of structural and mechanical principles of the musculoskeletal system to the analysis of human performance.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): KIN 70; BIOL 65 with a grade of 'C-' or better; approved GE Math Concept Course. Open only to declared KIN majors/minors, or instructor consent.

Grading: Letter Graded

KIN 159 - Sport and Adapted Activities

3 unit(s)

Principles of kinesiology for adapting sport and activity for individuals with disabling conditions.

Lecture 2 hours/Lab 2 hours.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent.

Grading: Letter Graded

KIN 160 - History of Sport and Physical Education

3 unit(s)

Historical survey of physical education and sport from primitive societies through classical and medieval periods to the nineteenth and twentieth centuries. Development of sport, physical education and recreation in the U.S. and factors affecting their growth.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent.

Grading: Letter Graded

KIN 161 - Philosophical Perspectives of Sport

3 unit(s)

Emphasis on systems of philosophy, aesthetic and moral considerations, metaphysical fitness and contemporary issues. Review of leading human movement theorists.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent.

Grading: Letter Graded

KIN 162 - Advanced Fitness Assessment and Exercise Prescription

3 unit(s)

In-depth study and analysis of the principles and techniques used in the assessment of physical fitness and health as well as the design of conditioning programs and physical activities.

Misc/Lab: Lecture 2 hours/Activity 2 hours.

Prerequisite(s): KIN 70 (or equivalent) for majors/minors only and KIN 155, or instructor consent. Grade of 'C-' or better in KIN 70 and KIN 155.

Grading: Letter Graded

KIN 163 - Science of Physical Fitness and Nutrition

3 unit(s)

Use of scientific principles, scientific investigation, and current technological advances to assess the relationship between diet, physical fitness, and disease. Examine scientific literature to evaluate the effects of nutritional intervention on exercise performance.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Cross-listed with NUFS 163. Nutrition, Food Science and Packaging is responsible for scheduling.

KIN 164 - Sociocultural Perspectives

3 unit(s)

Sociocultural processes of sport and play in contemporary society. The study of phenomena arising out of group relations within the realm of kinesiology.

Prerequisite(s): KIN 70 for Kinesiology majors/minors or Sports Journalism minors or instructor consent or lower division social science core GE.

Grading: Letter Graded

KIN 165 - Motor Development

3 unit(s)

Motor development of the individual from birth to maturity. Emphasis upon motor behavior, needs, capacities and interests.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent.

Grading: Letter Graded

KIN 166 - Motor Learning

3 unit(s)

Concepts, principles and theories of motor learning with application to physical activities.

Misc/Lab: Lecture 2 hours/lab 2 hours.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent; BIOL 66 with a grade of 'C-' or better.

Grading: Letter Graded

KIN 167 - Sports Psychology

3 unit(s)

Psychological aspects of sports, including the value of sports, psychological factors involved in competitive as well as non-competitive athletic activities and the role of sports psychologists.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

Cross-listed with PSYC 167. Kinesiology is responsible for scheduling.

KIN 168 - Psychology of Coaching

3 unit(s)

Social, clinical, child, measuring, industrial, personality and organizational psychology and the practical application of the material to coaching.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent.

Grading: Letter Graded

KIN 169 - Diversity, Stress and Health

3 unit(s)

Impact of structured inequalities on stress and health of diverse populations. Analysis of physiological/psychosocial health factors related to diversity, as well as behavioral interventions and social actions that mediate stress and optimize health and social justice.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with PH 169. Kinesiology is responsible for scheduling.

Sustainability Focused - SDG 3: Good Health and Well-Being

KIN 170D - Fieldwork in Sport Management

1-3 unit(s)

Practical experience in a professional work setting while working and observing 100 hours under direct supervision of qualified sport management professionals. Interns assigned a variety of duties and experiences.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): KIN 70, KIN 152, and upper division standing.

Grading: Credit/No Credit

KIN 170E - Field Experience Coaching on Campus

2 unit(s)

Practical experience in on-campus programs for coaching minors. May be repeated once for credit.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent.

Grading: Credit/No Credit

KIN 172 - Elementary School Programs, K-6

3 unit(s)

Examines current practices for managing student behaviors, instructional technology, legal regulations, and physical fitness needs as well as exploring adolescent development.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): KIN 70; KIN 165 or KIN 173. Open only to declared KIN majors/minors or instructor consent.

Grading: Letter Graded.

KIN 173 - Introduction to Teaching Physical Education and Non-Traditional Sports

3 unit(s)

Introduce future physical educators to the teaching profession in today's schools. Includes personal exploration, philosophy of teaching, ethics, standards for the teaching profession, legal and business aspects, current issues and trends, development of learning communities, and observation of effective teaching.

Lecture 3 hours/Lab 3 hours.

Prerequisite(s): KIN 70 for majors/minors only, instructor consent or concurrent enrollment.

Grading: Letter Graded.

KIN 174 - Assessment of Psychomotor Function

3 unit(s)

Basic procedural elements of informal observation, formal performance testing and direct measures of psychomotor function of individuals with disabling conditions.

Lecture 2 hours/Lab 2 hours.

Prerequisite(s): KIN 70 and KIN 156; Open only to declared KIN majors/minors or instructor consent.

Grading: Letter Graded

KIN 175 - Measurement and Evaluation in Kinesiology

3 unit(s)

Designed to develop an understanding of measurement and evaluation concepts and application relevant to assessment in the psychomotor, cognitive and affective domains. Activities include collection and computer analysis of data.

Misc/Lab: Lecture/activity 4 hours.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent; approved GE Math Concept Course.

Grading: Letter Graded

KIN 176 - Exercise Psychology

3 unit(s)

Examines the psychological determinants and consequences of exercise and physical activity. Analysis and

critique of research and theory relevant to exercise adherence, motivation, self-efficacy, and attributional style. Practical applications of theoretical concepts.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

KIN 178 - Management Practices for Physical Education Teachers

3 unit(s)

Examines current practices for managing student behaviors, instructional technology, legal regulations, and physical fitness needs as well as exploring adolescent development.

Lecture 2 hours/lab 2 hours.

Prerequisite(s): KIN 70 for Kinesiology majors/minors only or instructor consent; KIN 156; KIN 172; and upper division standing.

Grading: Letter Graded.

KIN 179 - Design and Assessment of Movement Experiences

3 unit(s)

Integrate concepts from kinesiology, motor learning, and motor development to address sequential movement experiences, including qualitative analysis and interactions with a performer.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): KIN 70 for Kinesiology majors/minors only or instructor consent; KIN 158, KIN 166 and KIN 178.

Grading: Letter Graded.

KIN 180 - Independent Study

1-6 unit(s)

Independent study through projects or directed reading related to the field of Kinesiology. Repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): GPA overall of 2.0; KIN 70 or instructor consent

Grading: Mandatory Credit/No Credit/RP

KIN 184 - Directed Reading

1-4 unit(s)

Assigned reading of selected books, journals and papers. Conferences with instructor, seminars, reports (oral and written). May be repeated for a total of 4 units.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): KIN 70 for majors/minors only for; instructor and department chair consent.

Grading: Credit/No Credit

KIN 185 - Senior Seminar

1 unit(s)

Active learning capstone course designed to synthesize students' undergraduate preparation, including internship experiences. Capstone course designed to integrate and synthesize students' knowledge and skills gained in their undergraduate preparation through active participation in the class and reflection on the internship experience; requires completion of a professional portfolio and a movement project

Prerequisite(s): KIN 70, Kin Majors ONLY, KIN Minors

Grading: Letter Graded

KIN 187 - Clinical Exercise Physiology

3 unit(s)

Physiological principles applied to the prevention, management, and treatment of chronic health conditions. Focus on the pathophysiology, acute response to exercise, chronic training effects, and development of appropriate conditioning and training programs for chronic conditions.

Prerequisite(s): KIN 70 (or equivalent) for majors/minors only or instructor consent; KIN 155; with grades of 'C-' or better in each.

Grading: Letter Graded

KIN 188 - Prevention and Care of Athletic Injuries

2 unit(s)

Prevention through safe equipment, facilities and protective strapping. Methods used to aid recovery.

Misc/Lab: Lecture/activity 4 hours.

Prerequisite(s): KIN 70, BIOL 65 with a grade of 'C-' or better, or instructor consent.

Grading: Letter Graded

KIN 189 - Prevention and Care of Athletic Injuries Laboratory

1 unit(s)

The laboratory course is designed to provide hands-on experience in the prevention and care of athletic injuries, including preventive and supportive taping techniques, emergency management, and various hands-on experiences related to the prevention of activity related injuries.

Prerequisite(s): KIN 70, KIN 188 (concurrent enrollment acceptable).

Grading: Letter Graded

KIN 191A - Advanced Assessment of Lower Extremity Injuries

3 unit(s)

An advanced course designed to develop knowledge and skills in recognition, assessment, and medical referral of athletic injuries to the lower extremity, thoracolumbar spine, posture and gait. Activity sessions are designed to assist in the development of clinical assessment skills.

Lecture 3 hours/Lab 3 hours.

Prerequisite(s): KIN 70, KIN 188, KIN 189. Open only to declared KIN majors/minors or instructor consent.
Grading: Letter Graded.

KIN 191B - Advanced Assessment of Upper Extremity Injuries

3 unit(s)

An advanced course designed to develop knowledge and skills in recognition, assessment, and medical referral of athletic injuries to the upper extremity, abdomen, thorax, cervical spine, head, and general medical conditions. Activity sessions are designed to develop clinical assessment skills.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): KIN 70; KIN 191A.

Grading: Letter Graded

KIN 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

KIN 193 - Organization & Administration in Athletic Training

2 unit(s)

Theoretical and practical information concerning organization and administration of a modern athletic training program, including managerial styles, personnel, facilities/equipment management, budget, medical records, insurance issues, legal aspects, public relations, and other current topics in athletic training.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent; KIN 188.

Grading: Letter Graded

KIN 194 - Therapeutic Exercise

3 unit(s)

Theoretical and clinical bases for the use of therapeutic exercise in rehabilitation settings; basic biomechanics, indications, contraindications, and proper application procedures of therapeutic exercise in athletic injury rehabilitation.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Pre/Corequisite(s): KIN 191A and KIN 191B.

Grading: Letter Graded

KIN 195 - Therapeutic Modalities

3 unit(s)

Theoretical and clinical aspects of therapeutic modalities in athletic rehabilitation. Includes the physics and physiological effects, indications and contra-indications, as well as application procedures of various therapeutic modalities.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): KIN 70 for majors/minors only or instructor consent. KIN 188 and upper division standing.

Grading: Letter Graded

KIN 197A - Practicum in Athletic Training I

1 unit(s)

Introductory level supervised practical experiences at selected athletic training clinical settings.

Repeatable for credit.

Prerequisite(s): BIOL 65 and BIOL 66 with a grade of 'C' in each, KIN 188, KIN 189 and 50 hours of observation. Open only to KIN majors.

Grading: Credit/No Credit

KIN 197B - Practicum in Athletic Training II

1 unit(s)

Observations and experiences within the profession of athletic training to assist in developing required National Athletic Trainers' Association competencies. Interns supervised on a daily basis by a NATA-certified athletic trainer.

Repeatable for credit.

Prerequisite(s): KIN 197A. Open only to KIN majors.

Grading: Credit/No Credit

KIN 197C - Practicum in Athletic Training III

1 unit(s)

Clinical internship in allied health-related situations, e.g., physician's offices, physical therapy sports medicine clinics, etc. Typically off-campus assignment.

Repeatable for credit.

Prerequisite(s): KIN 191A and KIN 191B (concurrent enrollment in KIN 191B is allowed), KIN 197B and professional insurance recommended.

Grading: Credit/No Credit

KIN 197D - Practicum in Athletic Training IV

1 unit(s)

Course is designed to provide the student with advanced, diverse, supervised, and practical experiences in the athletic training profession. Selected on-an-off campus clinical settings will be used to assist the student in the development of professional competencies and proficiencies.

Repeatable for credit.

Prerequisite(s): KIN 195, KIN 197C.

Grading: Credit/No Credit

KIN 198 - Internship in Kinesiology

1-6 unit(s)

Practical professional experiences related to the field of Kinesiology. Experiences are varied and can include exercise testing, prescription and evaluation; program leadership, design, and/or administration; coaching; and sport medicine internships. May be repeated for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division status;GPA overall of 2.0; KIN 70 or instructor consent

Grading: Mandatory Credit/No Credit/RP

KIN 250 - Fundamentals of Quantitative Research

3 unit(s)

Design, analysis and interpretation of quantitative research. Course focuses on the research process from the formulation of a research problem through the analysis of data. Topics include: ethics in research, research design and analysis issues and techniques, psychometrics, descriptive statistics, parametric and non-parametric inferential statistics, critiquing research.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): KIN 175 (or equivalent).

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

KIN 251 - Fundamentals of Qualitative Research

3 unit(s)

Design, analysis and interpretation of qualitative research. Course focuses on the research process from the formulation of a research problem through the analysis of data. Topics include: ethics in research, research design and analysis issues and techniques, data representation, critiquing research.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

KIN 255 - Advanced Exercise Physiology

3 unit(s)

Survey and critical evaluation of current concepts and literature regarding physiological regulatory mechanisms of the oxygen transport system and muscle metabolism. Acute and chronic effects of exercise

with emphasis placed on physiological limitations.

Prerequisite(s): KIN 155 (or equivalent).

Grading: Letter Graded

KIN 256 - Environmental Exercise Physiology

3 unit(s)

Survey and critical evaluation of current concepts and literature regarding various environmental (heat, cold, altitude, etc.) conditions as they affect the typical responses to exercise. Acute effects and chronic adaptations examined.

Prerequisite(s): KIN 155 (or equivalent).

Grading: Letter Graded

KIN 257 - Biomechanics

3 unit(s)

Principles and laws of physics and mechanics as applied to analysis of human movement activities. Critical evaluation of current research findings in sport biomechanics.

Prerequisite(s): KIN 158 (or equivalent).

Grading: Letter Graded

KIN 259 - Advanced Internship in Adapted Physical Activity

1-3 unit(s)

Advanced, supervised practicum for the development of direct service, administration/supervision, in-service training and advocacy/leadership competencies in adapted physical activity.

Prerequisite(s): BS degree with emphasis in adapted physical education and/or satisfactory completion of specified didactic curriculum.

Grading: Credit/No Credit

KIN 260 - Philosophy of Sport and Embodiment

3 unit(s)

Development of a consistent set of basic professional values compatible with individual differences which may serve as a frame of reference for professional behavior.

Prerequisite(s): KIN 161 (or equivalent).

Grading: Letter Graded

KIN 263 - International Sport and Physical Education

3 unit(s)

An analysis of the current structure, organization, and methods of physical education and sport in selected countries. Social, cultural, political, economic, and religious influences in western and non-western cultures will be explored by both national and topical methods of study.

Grading: Letter Graded

KIN 264 - Sport Sociology

3 unit(s)

An in-depth study of the relationship between sport and society. Focus will be on social and cultural factors that affect how Americans play and view sport.

Prerequisite(s): KIN 164 (or equivalent).

Grading: Letter Graded

KIN 265 - Advanced Motor Development

3 unit(s)

Examination of specific theory and research related to the movement changes that occur across the lifespan. Interpretation of recent related research and individually guided investigation of a specific area of concern in motor development.

Prerequisite(s): KIN 165 (or equivalent).

Grading: Letter Graded

KIN 266 - Principles and Concepts of Perceptual Motor Learning

3 unit(s)

Motor behavior and the learning patterns developed in acquiring skill in a motor activity.

Prerequisite(s): KIN 166 (or equivalent).

Grading: Letter Graded

KIN 267 - Advanced Sport Psychology

3 unit(s)

Sport psychology research and its use in field settings. Major theoretical areas (anxiety, motivation, cohesion, etc.) and their application in sport.

Prerequisite(s): KIN 167 and KIN 168 (or equivalent).

Grading: Letter Graded

KIN 268 - Evidence Based Research and Practice in Management and Assessment of Injuries to Lower Extremities

2 unit(s)

Multidisciplinary approach for recognition, initial care, treatment, and rehabilitation used to return athletes to lower extremity pre-injury fitness levels. (First course in two-course series.)

Prerequisite(s): BIOL 65, BIOL 66, KIN 155, KIN 158 and KIN 188.

Grading: Letter Graded

KIN 269 - Evidence Based Research and Practice in the Mgmt and Assessment of Injuries to the Upper Extremity

2 *unit(s)*

Multidisciplinary approach for recognition, initial care, treatment and rehabilitation used to return an athlete to upper extremity pre-injury fitness levels (second course in two-course series).

Prerequisite(s): KIN 268.

Grading: Letter Graded

KIN 271 - Advanced Topics in Athletic Training

3 *unit(s)*

This course is designed to improve the basic knowledge of athletic training students. Topics include outcome research and practical applications for mild traumatic brain injury, alteration evaluation skills for athletic injuries, and research design in the field of athletic training.

Grading: Letter Graded

KIN 272 - Evidence Based Research in the Practice of Therapeutic Exercise

3 *unit(s)*

Investigation of the scientific and philosophical bases of therapeutic exercise and therapeutic modalities with reference to the rehabilitation process, and to acquire skills necessary for prudent application of current modalities and techniques.

Prerequisite(s): KIN 155, KIN 158 and KIN 188 (or equivalent).

Grading: Letter Graded

KIN 273 - Evidence Based Research in the Practice of Therapeutic Modalities

2 *unit(s)*

An advanced course designed to critically evaluate the scientific and philosophical bases of therapeutic modality use. The course is intended to provide the student with the information necessary to perform prudent clinical applications of therapeutic modalities on orthopedic injuries.

Grading: Letter Graded

KIN 276 - Advanced Exercise Psychology

3 *unit(s)*

Psychological issues associated with exercise and physical activity. Analysis and critique of research and theory relevant to exercise adherence, motivation, self-efficacy, and attributional style. Evaluation of practical implications related to diversity, equity, and inclusion in the exercise context.

Prerequisite(s): KIN 176 (or equivalent) recommended.

Grading: Letter graded.

KIN 280 - Advanced Fieldwork in Sport Management

1-3 *unit(s)*

Advanced practical experience in a professional work setting under the direct supervision of qualified sport

management professionals. Interns assigned a variety of duties and experiences.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Credit/No Credit

KIN 281 - Legal and Ethical Aspects of Sport

3 unit(s)

Topics include sport and its relationship to the common law of contracts and torts, the statutory law of labor and antitrust, constitutional and civil rights law, communications law and ethics.

Prerequisite(s): Graduate standing

Grading: Letter Graded

KIN 282 - Marketing and Social Aspects of Sport

3 unit(s)

Sport and its relationship to market research designs, strategies, plans, fundraising, consumer behavior, political, sociological and historical parameters.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

KIN 283 - Management, Leadership and Communication in Sport

3 unit(s)

Management, administration, organizational behavior and communication theories, problems and issues in leadership in sport.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

KIN 284 - Financial Aspects of Sport

3 unit(s)

Examines traditional and innovative methods of revenue acquisition available to sport organizations. Current financial challenges, innovative concepts and strategies used in financing sport operation.

Prerequisite(s): Graduate standing or approval of the instructor.

Grading: Letter Graded

KIN 285 - Internship in Kinesiology

1-3 unit(s)

Advanced practical experience in a professional work setting under direct supervision of qualified professionals. Interns assigned various duties and experiences related to areas of specialization.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Credit/No Credit

KIN 286 - Independent Study

1-3 unit(s)

Independent study through research projects, creative intellectual productions or directed reading/literature review related to the field of Kinesiology. May be repeated for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Graduate Standing

Grading: Credit/No Credit

KIN 287 - Advanced Clinical Exercise Physiology

3 unit(s)

Pathophysiology and recent advances in the diagnosis and treatment of cardiovascular, metabolic, neurologic, and musculoskeletal diseases and disorders, including innovative biotechnological approaches. Content will include physiological mechanisms of these clinical conditions that affect responses to acute exercise and chronic adaptations to exercise training.

Prerequisite(s): KIN 187

Grading: Letter Graded

KIN 289 - Master of Arts Seminar in Kinesiology

3 unit(s)

The purpose of this seminar course is to offer an intensive, comprehensive focus of a specific topic, and/or theme as it relates to the study of kinesiology.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

KIN 292A - Leadership and Administration in Athletic Training

1 unit(s)

Current problems and issues related to the athletic training profession. Topics include professional ethics and competency, medicolegal issues, administration of athletic training programs, stress management and drug testing.

Grading: Letter Graded

KIN 292B - Seminar in Sports Medicine II

2 unit(s)

Current issues related to the athletic training profession. Topics include eating disorders, injury rehabilitation and management. Related topics of medical and scientific nature will be discussed with guest lecturers.

Misc/Lab: Lecture 2 hours/Supervision 1.5 hours

Grading: Letter Graded

KIN 293A - Fieldwork in Athletic Training I

2 unit(s)

Advanced practical experience in athletic training under the direct supervision of qualified sports medicine professionals.

Misc/Lab: Lecture 3 hours/Supervision 1.5 hours.

Grading: Credit/No Credit

KIN 293B - Fieldwork in Athletic Training II

2 unit(s)

Advanced practical experience in athletic training under the direct supervision of qualified sports medicine professionals.

Misc/Lab: Lecture 3 hours/Supervision 1.5 hours.

Prerequisite(s): KIN 293A.

Grading: Credit/No Credit

KIN 293C - Fieldwork in Athletic Training III

2 unit(s)

Advanced practical experience in athletic training under the direct supervision of qualified sports medicine professionals.

Misc/Lab: Lecture 3 hours/Supervision 1.5 hours.

Prerequisite(s): KIN 293A, KIN 293B.

Grading: Credit/No Credit

KIN 293D - Fieldwork in Athletic Training IV

2 unit(s)

Advanced practical experience in athletic training under the direct supervision of qualified sports medicine professionals.

Misc/Lab: Lecture 3 hours/Supervision 1.5 hours.

Prerequisite(s): KIN 293A, KIN 293B and KIN 293C.

Grading: Credit/No Credit

KIN 298 - Special Studies

3 unit(s)

Advanced individual research and projects.

Prerequisite(s): KIN 250.

Grading: Mandatory Credit/No Credit/RP

KIN 299 - Master's Thesis

1-6 unit(s)
Repeatable for credit.

Prerequisite(s): KIN 250 and advancement to candidacy for the master's degree.

Grading: Credit/No Credit/RP.

KNED 184Y - Student Teaching II: Classroom Teaching

4 unit(s)
Minimum 80-120 class periods of classroom, teaching laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities and seminar.

Repeatable for credit.

Prerequisite(s): Joint approval of major and Education departments.

Grading: Credit/No Credit

KNED 184Z - Student Teaching III - Classroom Teaching

4 unit(s)
Minimum 80-120 class periods of classroom, teaching laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities and seminar.

Repeatable for credit.

Prerequisite(s): Joint approval of major and Education departments.

Grading: Credit/No Credit

Note(s): May be in different subject/school and will be at a different grade level.

KNED 189 - Student Teaching Seminar in Adapted PE

2-5 unit(s)
Minimum 80-120 class periods of classroom, teaching laboratory, or field teaching in supervised experiences in adapted physical education at selected public and private agencies, across grades K-12 as well as related teaching activities and seminar.

Prerequisite(s): KIN 107, KIN 108, KIN 156, KIN 159, and KIN 174. Adapted physical education added authorization (APEAA) candidates only. Candidates concurrently enrolled in teaching credential programs or who have already earned a base credential only.

Grading: Letter Graded

KNED 339 - Instructional Materials and Procedures in Physical Education

3 unit(s)
Application of theories of learning and principles of teaching to the selection of instructional procedures to be used in physical education. Practical experience provided.

Misc/Lab: Lecture/activity 4 hours.

Prerequisite(s): KIN 172 and KIN 179 and department teacher education approval.
Grading: Letter Graded.

Note(s): Physical education majors and minors only.

Latin

LATN 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

LATN 180 - Individual Studies in Latin

1-3 unit(s)

Individual work by arrangement.

Prerequisite(s): Upper Division Standing in Latin and instructor consent.

Grading: Credit/No Credit

Liberal Studies Teacher Prep

LSTP 10 - Chronicles of Education

3 unit(s)

This course uses chronicles, or narratives, to expand traditional views about the sites where education takes place and to articulate the educational forces that shape individuals and societies.

Satisfies C2: Humanities.

Grading: Letter Graded

LSTP 85A - Fieldwork in Humanities A

1 unit(s)

Part of a 3-course series (LSTP 85A, B, C) that provides prospective K-8 teachers to California's public school classrooms with initial exposure to the elementary classroom setting. LSTP 85A combines readings and field experience to familiarize students with the duties and responsibilities that elementary teaching entails. Coursework involves 10 hours of volunteering in a public-school classroom with a credentialed teacher and online assignments.

Grading: Letter Graded

LSTP 85B - Fieldwork in Humanities B

1 unit(s)

Part of a 3-course series (LSTP 85A, B, C) that provides prospective K-8 teachers to California's public school classrooms with initial exposure to the elementary classroom setting. LSTP 85B provides a dual focus on diversity in the classroom and the development of a teaching philosophy. Readings and field experience familiarize students with the various manifestations of diversity (racial, cultural, linguistic, ability) in the classroom and prepare students to create a teaching philosophy that is responsive to the realities of today's diverse classrooms. Coursework involves 10 hours of volunteering in a public-school classroom with a credentialed teacher and online assignments.

Grading: Letter Graded

LSTP 85C - Fieldwork in Humanities C

1 unit(s)

Part of a 3-course series (LSTP 85A, B, C) that provides prospective K-8 teachers to California's public school classrooms with initial exposure to the elementary classroom setting. LSTP 85C focuses on ethnography as a means of gaining a deeper understanding of classroom observations and classroom dynamics. It combines readings on conducting classroom ethnographies with field experience to produce "Ethnographic Snapshots". Coursework involves 10 hours of volunteering in a public-school classroom with a credentialed teacher and online assignments.

Grading: Letter Graded

LSTP 139 - Education and (In)Equality

3 unit(s)

Education and (In)Equality explores the ways in which education cultivates free and empowered individuals that shape democratic egalitarian societies. It also explores the ways education can be used to oppress, dominate, and perpetuate social, economic and political inequalities. SJSU Studies Area: S

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

LSTP 185 - Field Experience in Humanities

3 unit(s)

Supervised field work for liberal studies and humanities majors. Includes weekly meetings to discuss readings and field work experiences and to reflect upon humanities education, multicultural school settings and other nonprofit agencies and organizations that promote the humanities.

Lecture 3 hours/lab 2 hours.

Grading: Credit/No Credit

Linguistics

LING 20 - Nature of Language

3 unit(s)

Introduction to the nature of language as a social institution and practice in observing language structure and use in local speech communities.

Satisfies D: Social Sciences.

Grading: Letter Graded.

LING 21 - Critical Thinking and Language

3 unit(s)

Exploring systems of language and logic in oral and written discourse, with a focus on the role of shared cultural assumptions, language style and the media of presentation in shaping the form and content of argumentation.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded.

LING 22 - Language across the Lifespan

3 unit(s)

Introduction to what is known about how people successfully learn second languages, with a focus on physiological, psychological, social-cultural and linguistic factors that affect second language acquisition, and on skills and strategies that promote language learning across the lifespan.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

LING 24 - Language Variation in Space, Time, & Culture

3 unit(s)

Exploring the diverse structural patterns and social functions found in English; analyzing the social, cultural, political, historical, and technological factors underlying language change; developing critical thinking and effective argumentation in writing.

Satisfies A3 or D: Critical Thinking and Writing or Social Sciences.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded.

LING 25 - Languages of the World

3 unit(s)

Explore the diversity of the world's languages through studying major language families, including basic language structure, language change and historical relationships, the sociocultural aspects of language, typological patterns and universals, writing systems and language vitality and endangerment.

Satisfies D: Social Sciences.

Grading: Letter Graded.

LING 26 - Quantitative Reasoning in Linguistic Diversity

3 unit(s)

An introduction to descriptive and inferential statistics, including the visual interpretation and presentation of data about linguistic diversity and related social phenomena like education and immigration. Interpretation of numerical and graphical data to draw inferences about complex social issues.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Mathematics Enrollment Category M-I or M-II; for Categories III and IV, LING 26W is required as a corequisite, unless a GE Area B4 course was previously completed with a grade of C- or better.

Grading: Letter Graded

Note(s): A grade of C- or better is required to satisfy GE Area B4.

LING 26W - Quantitative Reasoning Linguistic Diversity Workshop

1 unit(s)

Support course for LING 26. Provides extra practice and support for students with both concepts and operations related to quantitative reasoning and descriptive statistics.

Corequisite(s): LING 26 required as a corequisite for Math Enrollment Categories M-III and M-IV; recommended for Enrollment Category M-II.

Grading: Letter graded.

LING 92 - International Program Studies

1-9 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

LING 101 - Introduction to Linguistics

3 unit(s)

Scientific study of language. Phonetics, phonology, morphology, syntax, semantics, pragmatics,

sociolinguistics, psycholinguistics, historical linguistics, language universals and typology.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

LING 107 - Patterns of English

3 unit(s)

Description of the sound, word-formation, sentence, semantic and discourse patterns of English. Analysis of contemporary examples of spoken and written English.

Prerequisite(s): Written Communication I (or equivalent).

Grading: Letter Graded

LING 108 - Introduction to Second Language Development, Teaching, and Assessment

3 unit(s)

Theoretical and practical approaches to how people learn first, second, and foreign languages in bilingual and multilingual educational settings. Methods, materials, and assessment of language development for English language learners K-16.

Prerequisite(s): LING 101 or ENGL 103 or LLD 107.

Grading: Letter Graded

LING 111 - Introduction to Linguistic Phonetics

3 unit(s)

Production, recognition and accepted transcription of speech sounds used in languages. Physiological and acoustic analysis of speech.

Prerequisite(s): LING 101 or instructor consent.

Grading: Letter Graded

LING 112 - Introduction to Syntax

3 unit(s)

Introduction to the study of sentence structure: Syntactic constructions; constituent structure; grammatical relations; dependency relations; problems in syntactic analysis; formal systems for describing syntactic structure; typological range of syntactic phenomena.

Prerequisite(s): LING 101.

Grading: Letter Graded

LING 113 - Introduction to Phonology

3 unit(s)

Examination of sound patterns found in the world's languages, their description via traditional phonemic analysis, distinctive feature analysis and rule writing in the format of generative phonology.

Prerequisite(s): LING 101 and LING 111.

Grading: Letter Graded

LING 114 - Introduction to Semantics and Discourse

3 unit(s)

Approaches to meaning, truth conditional semantics, relation of semantics to pragmatics and speech act theory (e.g., presupposition, deixis, adjacency pairs) and text structure (cohesion).

Prerequisite(s): LING 101 or instructor consent.

Grading: Letter Graded

LING 115 - Corpus Linguistics

3 unit(s)

Introduction to the use of large collections of computer-readable text ("corpora") in linguistics. Focus on text processing techniques and quantitative data analysis. Other topics: philosophical foundations; lexical resources; the WWW as corpus; applications to stylistics, language teaching, and sociolinguistics.

Prerequisite(s): LING 101 and CS 22A, or instructor consent

Grading: Letter Graded

LING 122 - English as a World Language

3 unit(s)

A survey of the ways and the purposes which English is used in diverse societies and cultures around the world, including the United States; implications for international and cross-cultural communication.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ASIA 122. Linguistics and Language Development is responsible for scheduling.

LING 123 - Sound and Communication

3 unit(s)

Basic acoustics and nature of sound as applied to the study of vocal communication by humans and other animals. Voice communication as transmission of a speech code via sound.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

LING 124 - Introduction to Speech Technology

3 unit(s)

Strategies in man-machine communication, with a focus on speech recognition and speech synthesis. Computer modeling of speech production and perception.

Prerequisite(s): LING 101, LING 111 or instructor consent.

Grading: Letter Graded

LING 125 - Introduction to Historical and Comparative Linguistics

3 unit(s)

Why and how languages change; how linguists go about studying, documenting and explaining such change. Social and phonetic motivations for change. Language families and proto-languages.

Prerequisite(s): LING 101, LING 111 or instructor consent.

Grading: Letter Graded

LING 129 - Culture, Language and Ethnicity in the U.S.

3 unit(s)

The role of language in the formation of culture and ethnicity in the U.S. Language and culture contact between indigenous, colonial and immigrant peoples.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

LING 161 - Psycholinguistics

3 unit(s)

Psychology of language. Child language acquisition, language disorders, representation of language in the brain, cognitive aspects of linguistic communication, theories of language in linguistics and psychology.

Prerequisite(s): LING 101.

Grading: Letter Graded

LING 162 - Introduction to Morphology

3 unit(s)

Examination of the morphological structure of words; morphological typology; morphemes, morphs and allomorphs; issues in inflectional and derivational morphology; morphophonemics; word syntax; productivity, markedness, iconicity.

Prerequisite(s): LING 101 or instructor consent.

Grading: Letter Graded

LING 165 - Introduction to Natural Language Processing

3 unit(s)

Computer processing of text using data-driven (statistical) and knowledge-driven (rule-based) methods.

Applications including spelling correction, information retrieval, question answering, and machine translation.

Prerequisite(s): LING 101 and LING 115, or instructor consent.

Grading: Letter Graded

LING 166 - Sociolinguistics

3 unit(s)

Relationship between language and society; language and identity (including social constructs of gender, race/ethnicity, age, or social class); introduction to theories of language variation and change and methods used in sociolinguistic research.

Prerequisite(s): LING 101 or Instructor Consent.

Grading: Letter Graded

LING 167 - Multilingualism and Language Contact

3 unit(s)

Offers global and local perspectives on bi-/multilingualism, at the level of the individual (language acquisition, language choice, identity) and society (language ideologies and policies); explores varied social and linguistic outcomes of languages contact (pidgin and creole languages, code-switching, language shift).

Prerequisite(s): LING 101.

Grading: Letter Graded

LING 180 - Individual Studies

1-3 unit(s)

Individual work by arrangement.

Prerequisite(s): Instructor consent and department chair approval.

Grading: Credit/No Credit

LING 192 - International Program Studies

1-9 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

LING 201 - Phonology: Theory and Applications

3 unit(s)

Survey of the theoretical issues in phonology; language universals; notions of markedness and natural rules; psychological reality of phonological constructs. Applications to language teaching, speech synthesis and automatic speech recognition.

Prerequisite(s): LING 101, LING 111 and LING 113.

Grading: Letter Graded

LING 202A - Syntactic Theory

3 unit(s)

Aspects of syntax and grammatical theory.

Prerequisite(s): LING 101 and LING 112.

Grading: Letter Graded

LING 203 - Semantic Structures

3 unit(s)

Aspects of meaning and semantic theory.

Prerequisite(s): LING 101 and LING 114, or instructor consent.

Grading: Letter Graded

LING 213 - Linguistic Field Methods

3 unit(s)

Methods in phonological, morphological and syntactic analysis of linguistic data obtained from native-speaker informants.

Prerequisite(s): LING 101, LING 111, LING 112 and LING 113 (or equivalents).

Grading: Letter Graded

LING 220 - Computational Linguistics I

3 unit(s)

Part 1 of an introduction to the foundations of computational linguistics, including familiarity with the literature and tools of the field. Emphasis on the importance of algorithms, algebra, machine learning, and formal language theory in the development of new tools and software applications. Empirical phenomena in linguistics are sampled from a variety of languages to motivate and illustrate the use of concepts such as representations, processes, and learning.

Prerequisite(s): LING 101 and LING 165, or instructor consent.

Grading: Letter graded.

LING 221 - Computational Linguistics II

3 unit(s)

Part 2 of an introduction to the foundations of computational linguistics including familiarity with the literature and tools of the field. Emphasis on the importance of algorithms, algebra, machine learning, and formal language theory in the development of new tools and software applications. Empirical phenomena in linguistics are sampled from a variety of languages to motivate and illustrate the use of concepts such as representations, processes, and learning.

Prerequisite(s): LING 220

Grading: Letter graded.

LING 230 - Seminar in Linguistics

3 unit(s)

Variable topics in linguistics.

Grading: Letter Graded.

LING 298 - Individual Study

1-4 unit(s)

Advanced individual research.

Prerequisite(s): Instructor consent.

Grading: Mandatory Credit/No Credit/RP

LING 298P - Master's Project

1-6 unit(s)

Project research.

Repeatable for credit.

Grading: Credit/No Credit/RP.

LING 299 - Master's Thesis

1-6 unit(s)

Thesis research.

Grading: Credit/No Credit/RP

LING 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Linguistics & Language Development

LLD 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

LLD 100A - Writing Competency through Genres

3 unit(s)

Prepares students for 100W through drafting, feedback, and revision to demonstrate writing competency. Develops ability to analyze written genres used in the students' chosen disciplines as well as write analytical and reflective essays.

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE.

Grading: Letter Graded.

LLD 100W - Writing Workshop

3 unit(s)

Advanced composition. Instruction and practice in reading, discussing and writing about issues germane to the student's major field of study.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); Completion of core GE, and upper division standing. No Business Administration majors. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

LLD 100WB - Writing Workshop for Business Students

3 unit(s)

Instruction and practice in reading, oral interaction and writing activities germane to the genres of the business world.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): ENGL 2, any A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Allowed Declared Majors: Business Administration, Engineering Technology, Public Relations, Organizational Studies, Information Science and Data Analytics.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

LLD 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

LLD 230 - Seminar in Linguistics/TESOL

3 unit(s)

Topics in TESOL or linguistic theory.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

LLD 250W - Becoming a Professional in Linguistics/TESOL

3 unit(s)

Course focuses on the research and communication skills needed to become an active and effective member of the professional community in linguistics or TESOL.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

LLD 260 - English Structures for Teaching I

3 unit(s)

The phonological, morphological and syntactic structures of English for pedagogical purposes.

Prerequisite(s): LING 101 and LING 107.

Grading: Letter Graded

LLD 261 - English Structures for Teaching II

3 unit(s)

The semantic, pragmatic and discourse structure of English for pedagogical purposes.

Prerequisite(s): LLD 260 or Instructor Consent

Grading: Letter Graded

LLD 270 - Second Language Acquisition

3 unit(s)

Products and processes of child and adult second language acquisition: classroom instruction versus untutored settings; psychological variables; individual differences; interlanguage hypothesis; input and interaction in language development; organization of language systems of bilinguals.

Prerequisite(s): LING 101.

Grading: Letter Graded

LLD 271 - Intercultural Communication and Second Language Acquisition

3 unit(s)

The social and cultural factors that affect first and second language acquisition and use. Understanding how to function in intercultural settings.

Prerequisite(s): LING 101.

Grading: Letter Graded

LLD 280 - Methods and Materials for Teaching English to Speakers of Other Languages

3 unit(s)

A critical approach to evaluating learners' needs, designing curricula, identifying and evaluating materials, and applying appropriate methods and techniques in the ESL classroom.

Prerequisite(s): LING 101.

Grading: Letter Graded

LLD 282 - Practicum in Teaching English to Speakers of Other Languages

3 unit(s)

Directed practical experience in teaching English to speakers of other languages.

Prerequisite(s): LLD 280.

Grading: Credit/No Credit

LLD 283 - Curriculum and Assessment in TESOL

3 unit(s)

Theories and practices of needs analysis, curriculum design and assessment. Hands-on experience in identifying learner needs, determining instructional objectives, designing curricula/syllabi and constructing appropriate assessment instruments.

Prerequisite(s): LLD 280 (or equivalent).

Grading: Letter Graded

LLD 293 - Teaching College-level Reading and Writing

3 unit(s)

Theoretical foundations of literacies; strategies and approaches for teaching academic reading and writing to culturally and linguistically diverse classes in college and other post-secondary contexts

Prerequisite(s): LING 101, LING 107, or ENGL 103

Grading: Letter Graded

LLD 298 - Individual Study

1-4 unit(s)

Advanced individual research.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit/RP

LLD 298P - Master's Project

1-6 unit(s)

Project research.

Repeatable for credit.

Grading: Credit/No Credit/RP.

LLD 299 - Master's Thesis

1-6 unit(s)

Thesis research.

Grading: Credit/No Credit/RP

LLD 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Marine Science

MS 103 - Marine Ecology

4 unit(s)

Field-oriented introduction to interrelationship between marine and estuarine organisms and their environment emphasis on quantitative data collection and analysis.

Lecture 2 hours; Lab/Field 6 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Ecology, statistics (or concurrent registration in MS 104), or instructor consent.

Grading: Letter Graded

Note(s): Offered fall semester. This course satisfies graduate-level GWAR in this master's program.

MS 105 - Marine Science Diving

3 unit(s)

Skin and SCUBA diving course; pool-training culminates in ten ocean dives. Topics covered include diving physics physiology, diving environments, night diving and research diving. Successful completion gives NAUI and MLML certification.

Misc/Lab: Lecture 1 hour; lab/field 6 hours.

Prerequisite(s): Certified SCUBA diver (or equivalency as determined by instructor), upper division science major status, thorough physical examination, ability to pass swimming test

Grading: Letter Graded

Note(s): Course cannot be used to meet 30-unit degree requirement. Offered fall & summer.

MS 112 - Marine Birds and Mammals

4 unit(s)

Systematics, morphology, ecology and biology of marine turtles, birds, and mammals.

Misc/Lab: Lecture 2 hours lab/field 6 hours.

Prerequisite(s): Upper division college vertebrate zoology, instructor's consent; MS 103 recommended.

Grading: Letter Graded

Note(s): Course is generally offered alternate fall semesters during the odd years.

MS 113 - Marine Ichthyology

4 unit(s)

A description of the taxonomy, morphology and ecology of marine fishes. Both field and laboratory work concentrate on the structure, function and habits of marine fishes and the ecological interactions of these fishes with their biotic and abiotic surroundings.

Misc/Lab: Lecture 2 hours lab/field 6 hours.

Prerequisite(s): College zoology (or equivalent) or instructor's consent. MS 103 recommended.

Grading: Letter Graded

Note(s): Offered spring semester.

MS 124 - Marine Invertebrate Zoology I

4 unit(s)

A field-oriented introduction to the structure, systematics, evolution and life histories of the major marine phyla.

Misc/Lab: Lecture 2 hours lab/field 6 hours.

Prerequisite(s): College zoology or instructor consent; MS 103 recommended.

Grading: Letter Graded

Note(s): Course is generally offered alternate fall semesters during the odd years.

MS 131 - Marine Botany

4 unit(s)

Introduction to the plants of the sea, marshes and dunes, with emphasis on the morphology, taxonomy and natural history of seaweeds and vascular plants.

Misc/Lab: Lecture 2 hours/lab 6 hours.

Prerequisite(s): MS 103 recommended, or instructor consent.

Grading: Letter Graded

Note(s): Offered fall semester.

MS 135 - Physiological Ecology of Marine Algae

4 unit(s)

Understanding the adaptations of marine algae to their environment, including respiration, enzyme activity, and biochemical composition. Hands-on experience in basic electronic instrumentation, chemical separations, optical measurements, culturing methods and radioisotope techniques. Designed for students interested in the biology of seaweeds and phytoplankton.

Misc/Lab: Lecture 2 hours/lab and field 6 hours.

Prerequisite(s): MS 103, MS 131, MS 144 or instructor consent.

Grading: Letter Graded

Note(s): Offered fall semester.

MS 141 - Geological Oceanography

4 unit(s)

A study of the structures, physiography and sediments of the sea bottom and shoreline.

Lecture 2 hours; Lab/Field 6 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): Offered fall semester. This course satisfies graduate-level GWAR in this master's program.

MS 142 - Physical Oceanography

4 unit(s)

An introduction to the nature and causes of various oceanic motions including currents, waves, tides and mixing, and the physical properties of seawater including transmission of sound and light. Limited use of calculus.

Lecture 2 hours/lab 4 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): College algebra, college physics recommended, or instructor consent.

Grading: Letter Graded

Note(s): Offered fall semester. This course satisfies graduate-level GWAR in this master's program.

MS 143 - Chemical Oceanography

4 unit(s)

An introduction to the theoretical and practical aspects of the chemistry of the oceans, including major salts, dissolved gases, nutrient ions, carbonate system, transient tracers and shipboard sampling techniques.

Lecture 2 hours/lab 6 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): One year of college chemistry.

Grading: Letter Graded

Note(s): Offered spring semester. This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 14: Life Below Water

MS 144 - Biological Oceanography

4 unit(s)

The ocean as an ecological system. Emphasis on the complexity of environmental influences on plankton, the transfer of organic matter between trophic levels and nutrient cycles. Laboratory sessions will include methods in sampling, shipboard techniques, identification of the plankton, and current analytical techniques.

Lecture 2 hours/lab 6 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): General biology, general chemistry, or instructor consent.

Grading: Letter Graded

Note(s): Offered spring semester. This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 14: Life Below Water

MS 180 - Independent Studies

1-4 unit(s)

Faculty-directed study of selected problems; open to undergraduate students with adequate preparation. Offered every semester. May be repeated once for credit.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MS 201 - Library Research Methods in Marine Science

1 unit(s)

Students will gain an advanced understanding of the nature of scientific information. Lectures, discussions and assignments will provide the framework for using and evaluating a variety of information sources in marine and ocean sciences. Strong emphasis will be placed on developing critical skills to interweave knowledge of the history of science into the context of bibliographic tools including the digital realm.

Prerequisite(s): Graduate standing, instructor consent.

Grading: Letter Graded

Note(s): Offered spring semester.

MS 202 - Oceanographic Instrumentation

4 unit(s)

Principles of instruments used in oceanographic research, introduction to electronics, and applications of instrument measurements. Emphasis will vary from CTD profilers, current meters, radiometry and chemical measurement.

Misc/Lab: Lecture/discussion 2 hours; lab/field 6 hours.

Prerequisite(s): Graduate standing; MS 141, MS 142 and instructor consent.

Grading: Letter Graded

Note(s): Offered alternate spring semesters.

MS 203 - Advanced Marine Ecology

4 unit(s)

Marine ecology is the study of factors determining the distribution and abundance of marine organisms. This course focuses on the major ecological processes determining the structure and diversity of species assemblages at several scales, primarily at that of the community.

2 hours lecture/ 6 hours lab.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Ecology, Statistics, Instructor consent, Graduate level.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

MS 204 - Sampling and Experimental Design

4 unit(s)

Basic design of experiments and field sampling. Biases and problems of sampling marine biota.

Prerequisite(s): Graduate standing; MS 103 and MS 104 .

Grading: Letter Graded

Note(s): Offered spring semester.

MS 205 - Aquaculture

4 unit(s)

Theoretical and technical aspects of commercial and conservation aquaculture including water quality, pathobiology, nutrition, physiology, reproduction, environmental impacts, and regulations. Includes field trips to aquaculture facilities and hands-on practice.

Lecture 2 hours/Lab 6 hours.

Grading: Letter graded.

Sustainability Related - SDG 2: Zero Hunger

MS 206 - Molecular Biological Techniques

4 unit(s)

Laboratory-based overview of concepts and techniques for the isolation, characterization, and analysis of DNA and RNA. Covers standard methods (amplification, cloning, and sequencing), and selected specialized techniques (analysis of gene expression), emphasizing marine science applications.

Misc/Lab: Lecture 2 hours/Lab 6 hours.

Prerequisite(s): Graduate standing; college level genetics, molecular biology, or instructor consent.

Grading: Letter Graded

Note(s): Offered fall semester.

MS 208 - Scientific Methods

4 unit(s)

Course is designed to help students develop an understanding of strengths and limitations of various types of scientific reasoning, methodology, and analysis as they relate to scientific progress. Course centers on: round-table discussions of papers and techniques; interactive computer , laboratory, and field learning experiences; and development of critical thinking and writing skills.

Misc/Lab: Lecture 3 hours/Lab 2 hours.

Prerequisite(s): Graduate standing; instructor consent and approved thesis proposal.

Grading: Letter Graded

Note(s): Offered spring semester.

MS 210 - Advanced Marine Mammals, Birds & Turtles

4 unit(s)

This course examines the biology of marine mammals, birds and turtles. Topics include systematics and evolution, adaptations to the marine environment, diving physiology and behavior, communication and echolocation, ecology, and conservation. This class consists of lectures, discussions of recent literature, and laboratory exercises.

Misc/Lab: 2 hours lecture/ 6 hours lab

Prerequisite(s): Introductory Biology, upper division vertebrate biology (physiology, ecology or similar)

Grading: Letter Graded

Sustainability Related - SDG 14: Life Below Water

MS 211 - Ecology of Marine turtles, Birds, and Mammals

4 unit(s)

Community approach to the ecology of marine birds and mammals using experimental and sampling methodology. The class will examine the distribution, abundance, trophic ecology, and behavior of birds and mammals in Elkhorn Slough and Monterey Bay.

Misc/Lab: Lecture/discussion 2 hours; lab and field 6 hours.

Prerequisite(s): Graduate standing; MS 103, MS 104 and MS 112 and instructor consent.

Grading: Letter Graded

Note(s): Generally offered alternate fall semesters during even years.

Sustainability Related - SDG 14: Life Below Water

MS 213 - Advanced Marine Ichthyology

4 unit(s)

This course covers taxonomy and systematics, functional morphology, physiology, biogeography, and ecology of marine fishes at an advanced level. Accompanying laboratory and field sessions focus on taxonomic identification, morphological structure and function, and habits of marine fishes, and the ecological interactions of these fishes with their biotic and abiotic surroundings.

Misc/Lab: Lecture 4 hours/Lab 12 hours

Prerequisite(s): College zoology or equivalent or consent of instructor; MS 103 recommended.

Grading: Letter Graded

MS 214 - Physiological Ecology of Marine Animals

4 unit(s)

Examines the adaptations animals have evolved to live in marine environments to deal with gradients in water, temperature, salinity, oxygen, exercise, nutrients as well as short-term physiological responses to environmental changes. Topics include metabolism, sensory systems, respiration, circulation, thermoregulation, osmoregulation.

Misc/Lab: 2 hours lecture/ 6 hours lab

Prerequisite(s): upper division vertebrate biology (physiology)

Grading: Letter Graded

Sustainability Related - SDG 14: Life Below Water

MS 221 - Advanced Topics in Marine Invertebrates

1-4 unit(s)

Advanced consideration of the ecology, physiology and phylogeny of the various invertebrate phyla emphasizing current literature and research. Topics and emphasis will vary from term to term. May be once repeated for credit when topic changes.

Misc/Lab: Lecture, laboratory and field work variable.

Prerequisite(s): MS 124 and instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 14: Life Below Water

MS 231 - Biology of Seaweeds

4 unit(s)

Discussions on marine macroalgal biology with extensive reading of original literature. Ecologically-oriented individual research projects involving laboratory culture and field experimentation.

Misc/Lab: Lecture 2 hours; lab/field work 6 hours.

Prerequisite(s): Graduate standing; MS 131 or instructor consent.

Grading: Letter Graded

Note(s): Offered fall semester.

MS 233 - Advanced Topics in Marine Ecology

1-4 unit(s)

Selected topics and current issues in marine ecology. Subjects vary depending on student demand and availability of instructors. May be repeated once for credit when topic changes.

Misc/Lab: Lecture, lab/field work variable.

Prerequisite(s): Graduate standing; MS 103 and instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 14: Life Below Water

MS 241 - Advanced Geological Oceanography

4 unit(s)

Geological Oceanography (also known as Marine Geology) is the study of the past and present geological processes that occur on earth's largest habitat: the oceans. Topics covered include: types and composition of marine rocks and sediments, the shape of the ocean basins, processes occurring in the earth's

lithosphere and how they are interpreted within the broad theory of Plate Tectonics and interactions between geological processes, oceanography and biology in different marine habitats. Includes California's regional geology with visits on local outcrops.

Lecture 2 hours/Lab/Field 6 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter graded.

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 14: Life Below Water

MS 242 - Advanced Physical Oceanography

4 unit(s)

A comprehensive review of the physical processes involved in ocean transport and mixing on a global scale and in coastal regions. Laboratory component involves the collection, processing, and interpretation of oceanographic data. Students discuss recent scientific literature on the physical dynamics of the climate system and the role of physical processes in interdisciplinary problems in oceanography.

Lecture 2 hours/Lab 6 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor's consent (college algebra, college physics and calculus highly recommended).

Grading: Letter graded.

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 14: Life Below Water

MS 243 - Advanced Chemical Oceanography

4 unit(s)

Comprehensive study of biogeochemical cycling in the oceans, including major salts, dissolved gases, nutrient ions, carbonate parameters, and transient chemical tracers. Students will participate in field expeditions and laboratory experiments to apply their knowledge to real-world oceanographic problems.

Lecture 2 hours/Lab 6 hours.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): One year of college inorganic chemistry, or instructor consent.

Grading: Letter graded.

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 14: Life Below Water

MS 244 - Advanced Biological Oceanography

4 unit(s)

Comprehensive study of the ocean as an ecological system. Emphasis on the complexity of environmental influences on plankton, the transfer of organic matter between trophic levels and nutrient cycles. Laboratory sessions include methods in sampling, shipboard techniques, identification of the plankton, and current analytical techniques.

Lecture 2 hours/Lab 6 hours.

Grading: Letter graded.

Sustainability Related - SDG 14: Life Below Water

MS 248 - Marine Benthic Habitat Techniques

4 unit(s)

Collection and interpretation of geophysical data used to characterize marine benthic habitats. Basic geophysical principals will be reviewed. Application of techniques to identify and characterize marine benthic habitats, including echosounders, multibeam bathymetry and backscatter, sidescan sonar, seismic profiling, and GIS.

Misc/Lab: Lecture 2 hours; lab/field work 6 hours.

Prerequisite(s): Graduate standing; MS 141 or instructor consent.

Grading: Letter Graded

Note(s): Offered alternate spring semesters during odd years.

MS 250 - Laboratory Analysis for Marine Scientists

4 unit(s)

Theory and practice with standard and state-of-the-art laboratory techniques in marine sciences for dissolved and particulate constituents of seawater including spectroscopy, flow injection techniques, gas chromatography, ICP-MS, electrochemistry, chemical sensors and chemometrics.

Lecture 2 hours/Lab 6 hours.

Grading: Letter graded.

MS 251 - Marine Geochemistry

4 unit(s)

Geochemical processes in the oceans; low temperature thermodynamics of aqueous reactions, weathering, oxidation-reduction and biologically mediated reactions, processes occurring at the sea floor and air-sea interface.

Lecture 2 hours/Lab or field work 6 hours.

Prerequisite(s): MS 143 or instructor consent.

Grading: Letter Graded

MS 253 - Marine Pollution

4 unit(s)

General aquatic chemistry principles and in-depth analysis of the sources, transport and fate of various contaminants in the marine environment. Topics include nutrients, trace metals, persistent organic pollutants, microplastics, hydrocarbons, radioactive substances and carbon dioxide with accompanying practical experience in the field and laboratory.

Lecture 2 hours/Lab 2 hours.

Prerequisite(s): MS 143 or instructor consent.

Grading: Letter Graded

MS 263 - Data Analysis in Marine Science

4 unit(s)

Introduction to using observational oceanographic data, with hands on practice in scientific programming for data analysis. Lecture, discussion, and practical experience including the use of existing programs and subroutine libraries. Semester project required.

Misc/Lab: Lecture 2 hours/lab 6 hours.

Prerequisite(s): Graduate standing; MS 104 , college math and instructor consent.

Grading: Letter Graded

Note(s): Offer spring semester.

MS 272 - Subtidal Ecology

4 unit(s)

The ecology of nearshore rocky subtidal populations and communities with emphasis on kelp forests. Lectures and discussions of original literature. Field work with SCUBA including group projects on underwater research techniques and community analysis. Individual research on ecological questions chosen by the student. Knowledge of marine algae, invertebrates and statistics recommended.

Misc/Lab: Lecture 2 hours; lab/field work 6 hours.

Prerequisite(s): Graduate standing; MS 103; MLML diver certification and marine ecology.

Grading: Letter Graded

Note(s): Offered alternate spring semesters during odd years.

Sustainability Related - SDG 14: Life Below Water

MS 273 - Marine Environmental Studies of the Gulf of California

4 unit(s)

An analysis of Gulf of California marine environments. Lectures, readings, intensive field work, and written scientific paper based on original research. Topics vary. Taught with Mexican faculty and students from La Paz, Mexico. Must be able to participate in 2 weeks of field work.

Misc/Lab: Lecture 2 hours/lab 6 hours.

Prerequisite(s): Graduate standing; instructor consent.

Grading: Letter Graded

Note(s): Offered spring semester.

Sustainability Related - SDG 14: Life Below Water

MS 274 - Advanced Topics in Oceanography

1-4 unit(s)

Study of selected area in oceanography. Subjects vary depending on student demand and availability of instructors. May be repeated once for credit when topic changes.

Misc/Lab: Lecture, lab/field work variable.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 14: Life Below Water

MS 280 - Scientific Writing

4 unit(s)

Techniques and strategies of scientific writing used for proposals, journal submissions, abstracts of meetings, and scientific posters. Emphasis to develop writing skills by preparing, editing, and reviewing research proposals and literature reviews.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Letter Graded.

Note(s): Offered spring semester.

MS 285 - Graduate Seminar in Marine Science

2 unit(s)

Seminar will be held on topics changing each semester. Each student will be required to give at least one seminar.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Letter Graded

Note(s): Offered fall and spring semesters.

MS 298 - Research in the Marine Science

1-4 unit(s)

Independent investigations of an advanced character for the graduate student with adequate preparation.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Mandatory Credit/No Credit/RP

MS 299 - Master's Thesis

1-4 unit(s)

Offered spring and fall semesters. Available only to MLML Masters' students in good standing with the approval of their major advisor.

Prerequisite(s): Classified graduate standing, advancement to candidacy.

Grading: Mandatory Credit/No Credit/RP

MS 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in MS 299

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Mass Communication

MCOM 63 - New Media

3 unit(s)

Hands on instruction in multimedia and emerging new media technologies. Print and web page design, blogging, podcasting, videocasting, RSS and creation of multimedia presentations by combining still photos, graphics, and video with music and/or audio.

Grading: Letter Graded

MCOM 70 - Visual Communication for Modern Media

3 unit(s)

Design for television, newspapers, advertising, public relations, magazines, film and video. Modules include design and impact of visual imagery and how to apply sound ethical principles.

Grading: Letter Graded

MCOM 72 - Mass Communication and Society

3 unit(s)

Mass communication and its relationship to society. Basic theories in mass communication, contemporary issues and milestones in our understanding of media effects.

Satisfies D: Social Sciences.

Prerequisite(s): Not repeatable for credit if equivalent course has been taken elsewhere.

Grading: Letter Graded.

MCOM 84 - Storytelling in the Age of Intelligent Machines

3 unit(s)

Explores the far-reaching implications of Artificial Intelligence (AI)/Cognitive Computing (CC) on non-fiction and fiction storytelling and how numerous applications, tools and techniques are used to affect various aspects of digital storytelling.

Grading: Letter Graded

MCOM 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MCOM 94 - Sport, Communication and Society

3 unit(s)

Explores the intersection of sport and society with implications of class, race, and gender-based social issues in youth, college, and professional sport structures. Course is grounded in sociological and communication principles and requires critical thinking to investigate the links between many of the major issues facing sport organizations, media and athletes today.

Grading: Letter Graded.

MCOM 100W - Writing Workshop: Mass Communications

3 unit(s)

Advanced writing across the media -- advertising, journalism and public relations. Writing and research for an increasingly convergent media with multiple media formats from the Web to print and broadcast, including writing to accompany audio and visual images.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Allowed Declared Majors: Public Relations, Journalism, Advertising. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR). Should be taken junior year; required of all advertising, journalism and public relations majors before they reach senior standing.

MCOM 101 - Media Law and Ethics

3 unit(s)

Principles and case studies of mass communications law and ethics. Constitutional guarantees, libel,

privacy, contempt, privilege, copyright, Internet law, FCC and FTC regulatory law.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

MCOM 104 - Introduction to Mass Communications Research

3 unit(s)

Introduction to social science research in mass communications; emphasis on public opinion research, including sampling, survey research design, measurement; also precision journalism, content analysis and external databases; may include class project.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

MCOM 105 - Lifestyles, Diversity and the Media

3 unit(s)

Identifies and evaluates the impact of ethnicity/culture, alternative lifestyles and gender issues on advertising, television, radio, newspapers, magazines and public relations. Examines attitudes, trends and perceptions that help shape mass communication messages.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

MCOM 106 - Global Mass Communication

3 unit(s)

Societal factors behind gathering and disseminating information and entertainment content among mass communication systems of the world. Basic theoretical concepts about international communication and international relations. Impact on economy, politics, culture and governmental communication policies.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

MCOM 107 - Audio Podcasting, Aesthetics and Invention

3 unit(s)

Explores philosophies, methods, and perceptions of sound aesthetics, archiving, and techniques that comprise audio podcasting (and related documentary production) to develop "aural" skills collaboratively across traditional and new media technologies as innovators of sound practice.

Grading: Letter Graded

MCOM 108 - Virtual Worlds, Virtual Reality and Mass Media

3 unit(s)

Explores how virtual reality is shaping our media experiences and expectations, from work, socialization and news reporting. Students learn to investigate, experiment, and interact with virtual and augmented

technologies, structures and people within those media platforms.

Grading: Letter Graded

MCOM 111 - Mass Communications Internship

3 unit(s)

Field work for advertising, journalism and public relations majors near end of junior or beginning of senior year, including summer term.

Course may be repeated up to 9 units for credit.

Prerequisite(s): At least 9 units of major course work in the department (including specified foundation courses) and advisor consent.

Grading: Credit/No Credit.

MCOM 118 - Metaverse, Society and World-Building

3 unit(s)

Examination of the contemporary rise of immersive 3D Virtual Worlds and their impact on society and mass communications across the world. Exploration of Web 3.0 and virtual platforms and comparison between countries through historical recreations of events that provide the foundation for the Metaverse.

Satisfies SJSU Studies Area V: Cultures and Global Understanding

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

MCOM 139 - Special Topics Seminar

3 unit(s)

Mass communication seminar on specific topic during the semester. Seminar may include specialized topic in public relations, advertising, broadcast and print media.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): JOUR 61 and upper division standing; or instructor consent.

Grading: Letter Graded

Note(s): Offered only occasionally.

MCOM 163 - Advanced New Media Technologies

3 unit(s)

Hands on instruction in multimedia and emerging new media technologies. Print and web page design, blogging, podcasting, RSS and creation of interactive multimedia presentations by combining still photos, graphics, and video with music and/or other audio.

Prerequisite(s): MCOM 63 or Instructor Consent

Grading: Letter Graded

MCOM 170 - Strategic Social Media & Digital Marketing

3 unit(s)

Integration of content and social media within the broader digital marketing ecosystem to include paid social, paid search, search engine optimization, influencer marketing & brand storytelling.

Prerequisite(s): MCOM 100W

Grading: Letter Graded

MCOM 172 - Introduction to Spanish Language Media and Journalism

3 unit(s)

Mass media and its relationship to society in Spanish speaking societies, mainly in Latin America. Basic theories in mass communication in Latin America, contemporary issues, and milestones to understand the historical evolution and current state of Spanish speaking media and journalism.

Grading: Letter Graded.

MCOM 175 - Social Media and Web Analytics

3 unit(s)

Fundamentals of social media and web analytics. How to transform data to actionable insights and develop campaign strategies. Data analytics tools, deriving insights from social metrics, and suggesting data informed decisions to intended audiences.

Prerequisite(s): Upper division standing; or instructor consent.

Grading: Letter Graded.

MCOM 180 - Independent Study

1-6 unit(s)

Independent study projects and activities supervised by a Journalism and Mass Communications faculty member. Projects must be directly related to fields within the Journalism and Mass Communications School. All undergraduate Advertising, Journalism, Public Relations and graduate Mass Communications students may enroll.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Upper division standing.

Grading: Credit/No Credit

MCOM 180ITL - JMC International Experience

1-6 unit(s)

Through international study students will examine globalization models to gain a global perspective on geopolitical and economic issues, media and integrated strategic communications, explore the concepts of global citizenship and global corporate citizenship, and learn how to analyze cultural differences.

Course is repeatable for up to 9 units.

Prerequisite(s): SJSU upper division undergraduate or graduate student, or by instructor's permission.

Grading: Letter Graded

MCOM 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MCOM 199A - Advertising & Public Relations Agency I

4 unit(s)

The first of a two-semester capstone course where seniors will work in teams in a School-sponsored Advertising and Public Relations Agency to plan and execute real-world integrated strategic campaigns as well as to prepare entries for national competitions. Enrollment by permission only.

Prerequisite(s): PR Majors: PR 99, PR 190 or PR 192; PR 191; ADV Majors: ADV 91.

Grading: Letter Graded.

MCOM 199B - Advertising & Public Relations Agency II

4 unit(s)

The second of a two-semester capstone course where seniors will work in teams in a School-sponsored Advertising and Public Relations Agency to plan and execute real-world integrated strategic campaigns as well as to prepare entries for national competitions. Enrollment by permission only.

Prerequisite(s): MCOM 199A.

Grading: Letter Graded

MCOM 210 - Media and Social Issues

3 unit(s)

Selected readings and group discussions of significant published works dealing with mass communications: history, biography and appraisals; law and ethics of the print and broadcast media, advertising and public relations; public opinion and propaganda.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

MCOM 215 - New Media Visionaries

3 unit(s)

Class lecture series by visiting Silicon Valley leaders on the development of new media products, including such topics as idea generation, intellectual property, funding, design, development and integrated communication strategies.

Prerequisite(s): Admission to Graduate program.

Grading: Letter Graded

MCOM 270 - Communication Law and Public Policy

3 unit(s)

A case history approach to the law of communications, including libel, privacy and regulation of broadcasting. Major development and landmark decisions, with emphasis on contemporary ethical and social issues such as free-press/fair trial and new technology.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

MCOM 280 - Communication Management

3 unit(s)

Explores the practice and theory of media management as it applies to: online media, newspapers, magazines, radio stations, television stations, advertising agencies, public relations firms, corporate communications and marketing communications. It incorporates leadership, media economics and conflict resolution.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MCOM 284 - Advanced User Experience

3 unit(s)

Students work in teams to create, develop and implement hypothetical Web and mobile applications while living the role of the interactive project manager, design manager and development manager. Class focuses on the rapidly changing creative and technological base of interactive Web and mobile application development. Admission to graduate program.

Grading: Letter Graded

Sustainability Related

MCOM 285 - Web Design and Development

3 unit(s)

Introduction to website design, creation, and maintenance. Popular web design and graphics programs including content management systems (WordPress), and Adobe XD.

Grading: Letter Graded

MCOM 290 - Theory of Mass Communications

3 unit(s)

Basic theories of communications systems. Functional comparisons of various communications systems in relation to political structure. Communications theories in related disciplines of psychology, sociology, anthropology, economics and political science.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

MCOM 295 - Mass Communications Research

3 unit(s)

Methodologies of research in mass communications: historical, descriptive and empirical with emphasis on statistical aspects of data processing and interpretation.

Prerequisite(s): MCOM 210 and MCOM 290 or instructor consent.

Grading: Letter Graded

MCOM 298A - Master's Project I

3 unit(s)

Development of master's project literature review and proposal. Identify and work with professional mentors. Collaborative teamwork as appropriate to project goals.

Prerequisite(s): Advancement to Candidacy

Grading: Credit/No Credit/Incomplete.

MCOM 298B - Master's Project II

3 unit(s)

Completion of master's project meeting professional standards in Advertising, Journalism, or Public Relations. Presentation and constructive feedback to peers.

Prerequisite(s): MCOM 298A

Grading: Credit/No Credit/RP.

MCOM 299 - Master's Thesis

3-6 unit(s)

Supervised thesis in the field of mass communications. May be repeated for credit (not in same semester).

Prerequisite(s): Advancement to candidacy for the master's degree and approval of thesis proposal.

Grading: Mandatory Credit/No Credit/RP

Master Archives and Records Administration

MARA 200 - Record and Recordkeeping Professions

3 unit(s)

Overview of the management and role of records and information in business, society and history.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course is not repeatable.

Prerequisite(s): Demonstrated computer literacy through completion of required new student online technology workshop.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

MARA 204 - Management of Archives, Records, Inf. Governance

3 unit(s)

Overview of management and leadership roles and responsibilities in archives, records management, and information governance settings, and application of management principles, techniques and theories to program administration.

Prerequisite(s): Demonstrated computer literacy through completion of required new student online technology workshop.

Grading: Letter Graded

MARA 210 - Records Creation, Appraisal, and Retention

3 unit(s)

Overview of records creation and management processes and documentation of those processes. Topics include electronic records content management, digitization, physical records document control, legal compliance.

Prerequisite(s): MARA 200.

Grading: Letter Graded

MARA 211 - Access, Storage and Retrieval of Records

3 unit(s)

Overview of archival and contemporary records and information access, storage and retrieval. Examines records and information classification retrieval systems, storage operations, archival reference service and outreach, legal and ethical access considerations, and user communities.

Course is not repeatable.

Prerequisite(s): MARA 200 and MARA 204.

Grading: Letter Graded

MARA 249 - Management of Digital Data, Information, Records

3 unit(s)

Principles and methods of managing data, information and records as operational, legal and historical evidence in digital environments. Examines the way in which new information technologies impact an organizations' capacity to define, identify, control, manage, and preserve digital assets.

Course is not repeatable.

Prerequisite(s): MARA 200 and MARA 204.

Grading: Letter Graded

MARA 283 - Enterprise Content Management and Digital Preservation

3 unit(s)

Presents theoretical principles and practical aspects of digital content management and preservation. Explores challenges related to multiple file formats, standards, and retention requirements. Provides hands-on experience using both a digital content management system and a trusted digital repository.

Prerequisite(s): MARA 210, or MARA 211, or MARA 249

Grading: Letter Graded

MARA 284 - Seminar in Archives and Records Management

1-3 unit(s)

This course explores current issues and practices in archives and records management such as Protecting Conflicting Rights in the Digital Environment, Archivist: Meet Web 2.0, Ethics and Computer Forensics, and Implications of Cloud Computing on Records Management.

Course is repeatable for up to 12 units.

Prerequisite(s): MARA 200 and MARA 204.

Grading: Letter Graded

MARA 285 - Research Methods in Records Management and Archival Science

3 unit(s)

Overview of research methods in the social sciences and their application to research about and within archives and records centers. Research design, human subjects, quantitative and qualitative methods, model studies, methodological critique and evaluation, data analysis and presentation.

Grading: Letter Graded.

MARA 286 - Information Assurance

3 unit(s)

An overview of Information Assurance and Risk Management theories, principles, and techniques. Examines the information assurance frameworks and risk management planning structures used to ensure that an organization's information resources and assets are protected.

Prerequisite(s): MARA 200 and MARA 204 for all MARA students. These prerequisites are waived for non-

MARA majors.

Grading: Letter Graded

MARA 289 - Advanced Topics in Archives and Records Administration (ePortfolio)

1-3 unit(s)

Completion of the ePortfolio, integrating theory and practice, to satisfy the Culminating Experience, with the portfolio based on core competencies for archives and records administration professionals as outlined in the MARA 289 Handbook. Completed in final semester. Not repeatable.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): See information about eligibility by looking at the current MARA 289 Handbook and revising the section on "Eligibility".

Grading: Credit/No Credit/RP.

MARA 292 - Professional Certification

3 unit(s)

Through consultation with advisor: preparation exercises, mock exams, information, work experience and registration guidance toward application, submission and completion (completion not required) of ICRM and/or ACA exams for professional certification(s) in archives and records administration.

Prerequisite(s): MARA 200, MARA 202, MARA 204, plus six advanced courses.

Grading: Credit/No Credit/Incomplete.

MARA 294 - Professional Experience

3 unit(s)

Completion of an internship assignment or an organizational consulting project, or a special project related to the field of archives, records management and/or information governance.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): MARA 200 and MARA 204.

Grading: Credit/No Credit

MARA 295 - Organizational Consulting Project (OCP)

3 unit(s)

Organizational Consulting Projects are submitted by an individual or organization, supervised by a professional archivist or records manager, and requires the application of the knowledge and skills developed throughout the program.

Repeatable for up to 6 units. Course may be repeated for credit for up to 6 units.

Prerequisite(s): MARA 200, MARA 204

Grading: Credit/No Credit

Materials Engineering

MATE 25 - Introduction to Materials

3 unit(s)

Atomic and crystal structures; imperfections and atom movement; phase equilibria and transformations; boundaries; heat treatment of metals; mechanical, physical and chemical properties of engineering materials.

Prerequisite(s): CHEM 1A, PHYS 50, and MATH 31 or MATH 31X; all with a grade of "C-" or better.
Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

MATE 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MATE 115 - Structure/Properties of Solids

3 unit(s)

Bonding and crystal structure; the space lattice and unit cell calculations; crystalline anisotropy; point, line and surface defects; phase equilibria and interpretation of phase diagrams; thermal activation and the vacancy mechanism of mass transport in solids.

Prerequisite(s): PHYS 51, MATH 33A, CHEM 1B, and MATE 25; all with a grade of "C-" or better.

Corequisite(s): ENGR 10.

Grading: Letter Graded

MATE 129 - Introduction to Integrated Circuits Processing and Design

3 unit(s)

Basic processes involved in fabrication of integrated circuits; semiconductor physics, material preparation, oxidation, diffusion; photolithographic, thin-film deposition and etching. Simple component layout and evaluation of device parameters.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): MATE 25 or MATE 153 with a grade of "C-" or better. Allowed Declared Majors: Any Engineering. Or Graduate/PBAC level.

Grading: Letter Graded

Cross-listed with EE 129. Materials Engineering is responsible for scheduling.

MATE 131 - Fundamentals of Additive Manufacturing

3 unit(s)

Introduction to additive manufacturing (AM) and 3D printing, including development of AM, AM process chain, design for AM, and case studies. Focus on capabilities, limitations, and basic principles of various AM techniques, such as material extrusion, vat polymerization, powder bed fusion processes, material jetting, binder jetting, sheet lamination, and directed energy deposition processes.

Prerequisite(s): MATE 25 with "C" or better

Grading: Letter Graded

MATE 135 - Introduction to Composite Materials

3 unit(s)

Introduction to theory, application, and design with composite materials, including high performance resin-matrix fibrous composites and metal-matrix materials. Topics include materials, test techniques, environmental effects, design considerations, and application requirements.

Prerequisite(s): MATE 25 with a grade of "C-" or better.

Grading: Letter Graded

Cross-listed with ME 135. Materials Engineering is responsible for scheduling.

Sustainability Related - SDG 12: Responsible Consumption and Production

MATE 141 - Structure and Analysis of Materials

3 unit(s)

Crystallography and structural analysis of materials by x-rays and electrons. Imaging, diffraction, scattering and spectroscopic methods of characterization.

Seminar 2 hours / Lab 3 hours.

Prerequisite(s): MATE 115 with a grade of "C-" or better.

Corequisite(s): MATE 153.

Grading: Letter Graded.

MATE 143 - Principles of Scanning Electron Microscopy

1 unit(s)

Principles and practice of scanning electron microscopy. Basic theory and skills development of electron microscopy, including electron dispersive spectroscopy. Imaging and compositional analysis of conductive and non-conductive samples.

Lab: 3 hours.

Prerequisite(s): Introductory course in chemistry, physics or materials engineering.

Grading: ABC-/No Credit.

MATE 144 - X-Ray Diffraction Lab

1 unit(s)

Practical applications of X-ray diffraction. Including phase identification, texture analysis, grain size determination.

Pre/Corequisite(s): MATE 141 or instructor consent.

Grading: ABC-/No Credit

MATE 145 - Principles of Scanning Probe Microscopy

1 unit(s)

Principles and practice of various surface probe microscopies including AFM and STM.

Lab 3 hours.

Prerequisite(s): MATE 25 with a grade of "C-" or better.

Grading: ABC-/No Credit

MATE 146 - Experimental Methods in Materials Characterization

3 unit(s)

Principles of atomic force microscopy, scanning electron microscopy, thermal characterization in materials engineering related to solids. Practical applications in imaging, compositional, and thermal analyses of conductive/non-conductive and hard/soft materials.

Lab 6 hours.

Prerequisite(s): MATE 25 (with a C- or higher grade).

Grading: Letter Graded.

MATE 150 - Introduction to Computational Materials Engineering

3 unit(s)

Introduction to some of the methods used in computational materials science and engineering, including calculating atomic, molecular and solid-state properties of materials. Utilizes the quantum chemistry and solid state softwares such as Gaussian, Quantum Espresso and various analysis tools and visualization softwares. Introduction and discussion of computational techniques and their applicability.

Grading: Letter Graded

MATE 151 - Solid State Thermodynamics

3 unit(s)

Analysis of the ideal and real behavior of gases, liquids and solids from a macroscopic viewpoint; 1st and 2nd Law; phase rule, volumetric properties of fluids; heat effects; solution theory and applications; vapor-liquid and solid-solid equilibrium; chemical reaction equilibria.

Prerequisite(s): MATE 115 with a grade of "C-" or better.

Grading: Letter Graded

Note(s): Lecture 3 hours

MATE 152 - Solid State Kinetics

3 unit(s)

Diffusion and rates of reaction in solids. Transformations in solids, including nucleation and growth, martensitic transformation, spinodal decomposition and order-disorder reactions.

Prerequisite(s): 2.0 average and "C-" minimum grade in (MATE 115, MATE 141, MATE 151, MATE 153, MATE 154, MATE 155); ENGR 100W; and CHE 162.

Grading: Letter Graded

MATE 153 - Electronic, Optical, and Magnetic Properties of Materials

3 unit(s)

Crystalline and energy band structure of materials, thermal properties and electrical conduction in semiconductors and metals, optical and magnetic properties of solids.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): PHYS 51, CHEM 1A, EE 98 or MATE 25, and MATH 33A (each with a grade of "C-" or better).

Grading: Letter Graded

MATE 154 - Metals and Alloys

3 unit(s)

Thermal and mechanical processing of metals and alloys. Heat treatments, metallography and interpretation of microstructure. Biomedical, aerospace, automotive and other applications of metals discussed, including precipitation hardening of non-ferrous metal alloys, and the processing/structure/properties relationship in titanium alloys.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): MATE 115 with a grade of "C-" or better.

Corequisite(s): MATE 153 or ENGR 100W.

Grading: Letter Graded

MATE 155 - Materials Selection and Process Design

3 unit(s)

Methodology for selecting materials in process design for engineering applications. Case studies emphasizing materials selection and process parameters. Evaluation of material performance, robust design, and process control on semiconductor manufacturing, bioengineering devices, energy storage and conversion, water purification applications.

Prerequisite(s): MATE 115, CHE 162, and ENGR 10 with a grade of "C-" or better.

Grading: Letter Graded

MATE 165 - Photovoltaic Fabrication/Testing Lab

1 unit(s)

Laboratory course covering photovoltaic (solar cell) design, fabrication, and testing. TCAD simulation tools

will be used in design. Fabrication processes will include cleaning, surface texturing, deposition, diffusion, metallization, photolithography, etching, and electrical testing.

Lab 3 hours.

Prerequisite(s): MATE 25 or MATE 153 with a grade of "C-" or better; or corequisite of MATE 129.

Grading: Letter Graded

Cross-listed with EE 165. Materials Engineering is responsible for scheduling.

Sustainability Focused - SDG 7: Affordable and Clean Energy

MATE 168 - Microfluid Fabrication and Design

1 unit(s)

Hands-on design, fabrication, and testing of microfluidic devices. Processes including photolithography, soft lithography, and plasma bonding. Design problems for microfluidic devices. Introduction to microfluidics simulation.

Prerequisite(s): MATE 25 or MATE 153 or MATE 129 / EE 129.

Grading: Letter Graded

Cross-listed with EE 168 / ME 168. Mechanical Engineering is responsible for scheduling.

MATE 169 - Microelectromechanical Systems Fabrication and Design

1 unit(s)

Hands-on design, fabrication, and testing of micro electro-mechanical systems (MEMS). Processes including photolithography, etching, and metal deposition applied to MEMS. Design problems for MEMS transducer components. Introduction to MEMS simulation.

Misc/Lab: Lab 3 hours.

Prerequisite(s): MATE 25 or MATE 153 or MATE 129 / EE 129.

Grading: Letter Graded

Cross-listed with EE 169 / ME 169. Mechanical Engineering is responsible for scheduling.

MATE 175 - Biomaterials

3 unit(s)

Properties, function, design, characterization, and evaluation of biomaterials used in biosensors, drug delivery systems, bioimaging, biofilms, biocoatings, and bio/nano applications. Fundamental materials properties and chemistry of inorganic biomaterials such as ceramics, metals, composites, glasses; and organic biomaterials including DNA/RNA/protein/peptide systems, polymers, and hydrogels. Interconnectedness of the structure/processing/property relationship and processing conditions and their effect on resulting physical and mechanical properties.

Prerequisite(s): MATE 25 with a grade of "C-" or better.

Grading: Letter Graded

MATE 180 - Individual Studies

1-3 *unit(s)*

Individual work on special topics by arrangement.

Prerequisite(s): Major form on file with department and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

MATE 185 - Ceramics

3 *unit(s)*

Structure, properties and processing of crystalline and glassy ceramics, including defect thermodynamics, surfaces, ternary phase equilibria, and sintering. Applications include solid oxide fuel cells, oxide based chemical sensors, ceramics for biomedical and dental applications, and processing of electronic components.

Prerequisite(s): MATE 115 and MATE 151 with a grade of "C-" or better; MATE majors must also satisfy Jr. Core requirements.

Grading: Letter Graded

MATE 186 - Polymers

3 *unit(s)*

Structure and properties of solid polymers; chemistry; thermal transitions; mechanical, electrical and optical properties; influence of chemical structure and processing on properties; applications.

Prerequisite(s): MATE 25 with a grade of "C-" or better; MATE majors must also satisfy Jr. Core requirements.

Grading: Letter Graded

MATE 193 - Special Topics in Materials Characterization Lab

2 *unit(s)*

Hands-on laboratory experience in the characterization of special classes of materials including biomaterials, polymers, hydrogels, proteins, and cells, with emphasis on understanding the structure-property-performance relationship in the design and function of materials. Topics selected from chemical characterization, biological characterization, scattering and imaging methods, mechanical techniques, thermal analysis techniques, and surface modification techniques.

Lecture 1 hour/Lab 3 hours.

Course may be repeated for credit for different topics for a maximum of 4 units.

Prerequisite(s): Completion of Junior Core with a C- or better, ENGR 100W. For ChE, MatE, or closely related majors. Instructor consent.

Grading: Letter Graded

MATE 195 - Mechanical Behavior of Materials

3 *unit(s)*

Elasticity, plasticity, anelasticity; deformation mechanisms; effect of microstructure and imperfections; fatigue, creep, fracture; plane stress and plane strain; failure analysis for structural applications involving

engineering devices and systems, bulk and nanomaterials, material compatibility, and interfacial bonding in thin films.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): MATE 115, ENGR 100W, CHE 162, and CE 99 with a grade of "C-" or better; MatE majors must satisfy the Junior core.

Grading: Letter Graded

MATE 198A - Senior Design Project

2 unit(s)

Apply materials engineering principles to the design and implementation of an approved materials engineering project, Integrate global and social issues in engineering.

Misc/Lab: Lecture 1 hour/Lab 3 hours.

Satisfies SJSU Studies S: Self, Society & Equality in U.S. when taken as part of the MATE Major sequence.

Prerequisite(s): 2.0 average and "C-" minimum grade in (MATE 115, MATE 141, MATE 151, MATE 153, MATE 154, MATE 155); ENGR 100W; CHE 162.

Corequisite(s): ENGR 195A, MATE 195 and CHE 161

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: MATE 198B, ENGR 195A and ENGR 195B

MATE 198B - Senior Design Project

2 unit(s)

Apply materials engineering principles to the design and implementation of an approved materials engineering project, Integrate global and social issues in engineering.

Misc/Lab: Lecture 1 hour/Lab 3 hours.

Satisfies SJSU Studies V: Cultures and Global Understanding when taken as part of the MATE Major sequence.

Prerequisite(s): MATE 198A with a minimum grade of "C".

Corequisite(s): ENGR 195B

Grading: Letter Graded

Note(s): Meets GE Areas S and V when course is taken in combination with: MATE 198A, ENGR 195A and ENGR 195B.

MATE 199 - Special Topics in Chemical and Materials Engineering

3 unit(s)

Special Topics in Chemical and Materials Engineering. Content varies from semester to semester. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Cross-listed with CHE 199. Chemical Engineering is responsible for scheduling.

MATE 205 - Advanced Mechanical Behavior of Solids

3 unit(s)

Structure-property relationships in mechanical behavior of materials, including elastic, anelastic and plastic behavior; creep characteristics, fracture, testing methods, dislocation dynamics, strengthening mechanisms.

Prerequisite(s): MATE 115 (or equivalent) and mechanics of materials course (or equivalent courses).

Grading: Letter Graded

MATE 210 - Experimental Methods in Materials Engineering

3 unit(s)

Advanced study of experimental techniques used in materials engineering, including data acquisition and analysis, experiment design strategy and hands-on operation of advanced equipment.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): MATE 115 (or equivalent).

Grading: Letter Graded.

MATE 215 - Solid State Materials Engineering

3 unit(s)

Electrical, optical and magnetic properties. Includes wave mechanics, bonding theory, energy band theory, electronic transport, conduction, semiconduction and insulation.

Prerequisite(s): MATE 115 (or equivalent).

Grading: Letter Graded

MATE 220 - Principles and Applications of Electrochemistry

3 unit(s)

Applied electrochemical systems, such as fuel cells, batteries, electrolytic plating, electrosynthesis. Environmental degradation in biological and material systems. Modern electrochemical techniques in analytical chemistry, including polarography, cyclic voltammetry, coulometric and pulse methods.

Prerequisite(s): MATE 155 (or equivalent) or instructor consent.

Grading: Letter Graded

MATE 232 - Plasma Processing of Materials

3 unit(s)

Principles of low temperature plasmas used for materials processing, including plasma fundamentals, plasma chemistry, collision and heating mechanisms and diagnostics. Material interactions in plasma assisted etching, deposition, and surface treatment will be emphasized.

Prerequisite(s): MATH 33A, MATE 25, and PHYS 51 or equivalent courses.

Grading: Letter Graded

MATE 241 - Advanced Methods of Materials Characterization

3 unit(s)

Methods for characterization and analysis of bulk materials, films, nanoscale structures and surfaces.

Prerequisite(s): Upper division undergraduate course in chemistry, condensed matter physics or materials.

Grading: Letter Graded

MATE 244 - Introduction to Materials Informatics and Data Sciences

3 unit(s)

Introduction to machine learning for materials engineers and other disciplines interested in materials, and materials informatics techniques and related data science practices. Course will cover different types of material databases used in prediction of processing-structure and structure-property relationships.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

MATE 250 - Advanced Computational Materials Engineering

3 unit(s)

Provides hands-on experience with various methods in computational materials science and engineering, including electronic structure calculation and molecular simulation using various software packages such as Gaussian, Quantum Espresso, VASP, LAMMPS and other online tools and visualization software packages such as Xcrysden, and VESTA. The course examines the theoretical details of these various computational methods and their application, and require critical reading of literature papers and computation of materials properties.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

MATE 251 - Advanced Solid State Thermodynamics

3 unit(s)

Thermodynamics of phase changes, nucleation and growth, martensitic changes, diffusion, rate theory, structural changes accompanying transformation, applications of theoretical concepts to materials development.

Prerequisite(s): MATE 115 and MATE 151 (or equivalent).

Grading: Letter Graded

MATE 260 - Theory of Semiconductor Materials

3 unit(s)

Advanced theory of constitution, structure and energy bands in semiconductors; material requirements of devices; different methods of doping, interconnection, isolation of circuits, material processing and failure analysis.

Prerequisite(s): MATE 25, MATE 115, MATE 153 or MATE 129 (or equivalent).

Grading: Letter Graded

MATE 261 - Semiconductor Process Equipment

3 unit(s)

Covers the fundamental principles of equipment used in semiconductor processing. Basic vacuum technology will be covered, as well as processing tools such as CVD, PVD, ALD, Oxidation, Ion Implanter, Ion Beam Etcher, Plasma Etcher, Asher, Diffusion, and Thermal Processing. Both wet and dry tools, including basic plasma principles, will be included.

Grading: Letter Graded

MATE 262 - Semiconductor Wafer Processing

3 unit(s)

Advanced process design, fabrication and testing of transistors for analog integrated circuits. Design of statistical process control procedures for yield management will be covered. Industry standard TCAD tools and IC fabrication equipment will be used extensively in lab.

Grading: Letter Graded

MATE 263 - Semiconductor Device Reliability and Failure Mechanisms

3 unit(s)

Overview of semiconductor device reliability in terms of the reliability criteria, reliability testing methodologies, and accelerated lifetime test methods. Various industry cases studies on failure model analysis and failure mitigation techniques will also be presented.

Grading: Letter Graded

MATE 265 - Principles of Nanomaterials

3 unit(s)

The fundamental properties of nanomaterials including thermodynamic, mechanical, electrical, magnetic, optical and biochemical properties and synthesis and characterization. Applications including nanomaterials for structural composites, memory and logic devices, clean renewable energy technologies, bio materials in drug delivery, and aerospace applications.

Prerequisite(s): CHEM 1A, EE 98, MATH 33A, PHYS 51, MATE 25, and MATE 153.

Grading: Letter Graded

Sustainability Related - SDG 7: Affordable and Clean Energy

MATE 270 - Methods of Thin Film Deposition

3 unit(s)

Chemical and physical methods of thin film deposition including evaporation, sputtering, chemical vapor deposition, and electroplating. Thermodynamics and kinetics of growth; considerations for reactor design; control of deposition to alter film properties; deposition processes used for metals, dielectrics and

semiconductors.

Prerequisite(s): MATE 152 (or equivalent).

Grading: Letter Graded

MATE 280 - Graduate Research

2 unit(s)

Supervised individual research or directed studies for the student with adequate preparation. Students must have a research advisor and topic.

Course may be repeated for credit for a maximum of 10 units.

Grading: Credit/No Credit.

Note(s): Only students doing research on campus are eligible for MATE 280. Only one section of MATE 280/280I can be taken per semester. Not available to Open University students.

MATE 280I - Graduate Research Internship

2 unit(s)

Supervised individual research or directed studies for the student with adequate preparation. Students must have a research advisor and topic.

Course may be repeated for credit for up to 10 units.

Grading: Credit/No Credit.

Note(s): Not available to Open University students. This course is for students completing their research work at an off-campus location. Only one section of MATE 280/280I/282 can be taken per semester.

MATE 281 - MS Thesis/Project Preparation Seminar

3 unit(s)

Development of project or thesis proposal.

Lecture 2 hours/ Lab 3 hours.

Prerequisite(s): Classified standing, completion of minimum 9 units towards MS degree, candidacy form submitted, satisfactory completion of university graduate writing requirement.

Grading: Credit/No Credit.

Cross-listed with CHE 281. Materials Engineering is responsible for scheduling.

MATE 282 - Applied Graduate Research

3 unit(s)

Supervised master's research project directed by an SJSU faculty member research advisor. Students must be working on their master's experimental research at least 12-15 hours per week, and submit SJSU research advisor approved confirmation of research hours completed each week.

Course is repeatable for credit for up to 6 units.

Prerequisite(s): CHE 200

Grading: Credit/No Credit.

Note(s): Not available to Open University students.

MATE 283C - Graduate Curricular Practical Training

1-3 unit(s)

Curricular Practical Training (CPT) for graduate students. A report is required at the end of the semester.

Course is repeatable for credit for up to 6 units.

Prerequisite(s): Graduate standing, in good standing, and completed at least one semester of master's level work at SJSU.

Grading: Credit/No Credit.

Note(s): Not available to Open University students. This course is for students completing their Curricular Practical Training (CPT) at an off-campus location.

MATE 297 - Special Topics in Materials Engineering

1-4 unit(s)

Special topics to augment regularly-scheduled graduate courses.

Prerequisite(s): Graduate standing or instructor permission.

Grading: Letter Graded

Note(s): By arrangement only.

MATE 298 - MS Research/Project

1-2 unit(s)

Master's project work in Materials Engineering.

Prerequisite(s): Advancement to candidacy; MATE 281 (co-requisite with research advisor approval). Not available to Open University Students.

Grading: Credit/No Credit/RP.

MATE 298I - Master's Project Internship

1-2 unit(s)

For students completing their MATE Master's Plan B (Project) work at an off-campus location.

Course may be repeated for credit for up to 2 units.

Grading: Mandatory Credit/No Credit/RP

MATE 299 - Master's Thesis

1-3 unit(s)

Master's thesis work in Materials Engineering.

Prerequisite(s): Advancement to candidacy; MATE 281 (co-requisite with research advisor approval). Not available to Open University Students.

Grading: Credit/No Credit/RP.

MATE 299I - Master's Thesis Internship

1-3 unit(s)

For students completing their MATE Master's thesis work at an off-campus location.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): MATE 281, MATE 298. MATE 298 may be taken concurrently with instructor approval. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

MATE 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on dissertation, thesis, or project or in preparation for comprehensive exams beyond the minimum required units for cases in which final deliverables are still in progress and all other degree requirements except the culminating experience have been fulfilled.

Prerequisite(s): Outstanding RP grade in a previous semester in MATE 298 or MATE 299

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit

Mathematics and Statistics

MATH 1 - Mathematical Reasoning

3 unit(s)

Focus on foundational mathematical skills and knowledge in the context of contemporary society.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): MATH 1001S required for Math Enrollment Categories M-III and M-IV. Allowed Declared Majors: College of Engineering, College of Science, College of Business, Economics, Forensic Science, Packaging, or Undeclared.

Grading: Letter Graded

MATH 10 - Mathematics for General Education

3 unit(s)

Topics include methods of proof, problem solving, trigonometry, probability, statistics, applications to

scheduling and apportionment, population studies, consumer math, theory of games, polyhedra, networks, graph theory, linear programming.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I or M-II, or MATH 1 with a grade of C- or better.

Grading: Letter Graded

MATH 10A - Mathematics in Art and Music

3 unit(s)

An accessible look into some beautiful ideas of mathematics in art and music. Topics include plane symmetries, tilings, perspective drawing, musical intervals, scales and temperament, timbre and periodic functions.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): MATH 1010AS required for Math Enrollment Categories M-III and M-IV.

Grading: Letter Graded

MATH 10D - Probability, Data Science, Ethics, and You

3 unit(s)

An accessible introduction to the basic principles of probability and data science with a focus on ethical considerations.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): MATH 1010DS required for Math Enrollment Categories M-III and M-IV.

Grading: Letter Graded

MATH 10P - Mathematics in Politics

3 unit(s)

An accessible look into some beautiful ideas of mathematics in politics. Topics include voting systems, apportionment and gerrymandering.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): MATH 1010PS required for Math Enrollment Categories M-III and M-IV.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

MATH 12 - Number Systems

3 unit(s)

Structure of the real number system, numeration systems, elementary number theory, and problem-solving techniques; technology integrated throughout the course.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Two years of high school algebra; one year of high school geometry; Math Enrollment Category M-I or M-II, or GE Area B4 completed with a grade of C- or better.

Grading: Letter Graded

Note(s): This course is intended for future elementary teachers. The sequence of MATH 12, MATH 105, and MATH 106 satisfies subject matter competence in K-8 mathematics.

MATH 15 - Statway: Statistics-Concepts & Methods

3 unit(s)

Concepts and methods of statistics with an emphasis on data analysis. Topics include methods for collecting data, graphical and numerical descriptive statistics, correlation, simple linear regression, basic concepts of probability, confidence intervals and hypothesis tests for means and proportions, and chi-square tests.

Lecture 1 hour / Activity 4 hours

Satisfies Completion with a grade of C- or better satisfies the GE Area B4: Mathematics/Quantitative Reasoning requirement.

Grading: Letter Graded

Cross-listed with UNVS 15. Mathematics and Statistics is responsible for scheduling.

MATH 18A - College Algebra

3 unit(s)

Review of basic algebra. Complex numbers, functions, graphs, polynomials, inverse functions, exponential and logarithmic functions.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III; or MATH 1 with a grade of C- or better. MATH 1018AS required as a corequisite for Enrollment Categories M-III and M-IV, and recommended for Enrollment Category M-II.

Corequisite(s): MATH 18AW recommended.

Grading: Letter Graded

MATH 18AW - College Algebra Workshop

1 unit(s)

Students work in groups on college algebra material to help them understand college algebra concepts more thoroughly since it is the groundwork for success in future math courses.

Misc/Lab: Activity 3 hours.

Course may be repeated for credit for up to 3 units.

Corequisite(s): MATH 18A

Grading: Credit/No Credit

MATH 18B - Trigonometry

3 unit(s)

Trigonometric functions: Unit circle, right triangle, analytic; trigonometric identities. Analytic geometry (conic sections). Other topics chosen from: polar coordinates and complex numbers; vectors in two and three dimensions.

Prerequisite(s): MATH 18A with a grade of "C-" or better.

Grading: Letter Graded

Note(s): With MATH 18A, preparation for MATH 30/MATH 30X.

MATH 18BW - Trigonometry Workshop

1 unit(s)

Students work in groups on trigonometry material presented in MATH 18B, to help them understand trigonometry concepts more thoroughly.

Activity 3 hours.

May be repeated for credit for up to 3 units.

Corequisite(s): MATH 18B.

Grading: Credit/No Credit

MATH 19 - Precalculus

5 unit(s)

Preparation for calculus: polynomial, rational, exponential, logarithmic and trigonometric functions; analytic geometry.

Lecture 4 hours/Lab 3 hours.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III; or MATH 1 with a grade of C- or better.

Corequisite(s): MATH 1019S required as a corequisite for Enrollment Category M-III, and recommended for Enrollment Category M-II.

Grading: ABC-/No Credit.

MATH 30 - Calculus I

3 unit(s)

Introduction to calculus including limits, continuity, differentiation, applications and introduction to integration. Graphical, algebraic and numerical methods of solving problems.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I or M-II and satisfactory score on the Precalculus Proficiency Assessment; MATH 19 with a grade of B or better to waive the exam; or MATH 18A and MATH 18B, with a grade of B or better in each to waive the exam.

Grading: Letter Graded

Note(s): Students repeating MATH 30 are not eligible for this class and must take MATH 30X, but grade forgiveness can apply. MATH 30X is replacing MATH 30P and MATH 30PL.

MATH 30W - Calculus I Workshop

2 unit(s)

Designed to help all students excel in Calculus I. Students work in groups on challenging calculus problems to help them understand the concepts in Calculus I more deeply and lay the groundwork for success in future math courses.

Lab 6 hours.

Corequisite(s): MATH 30X.

Grading: Credit/No Credit

Note(s): The workshop is 2 units. Activities in this workshop include embedded Precalculus review as well as Calculus I material.

MATH 30X - Calculus I

3 unit(s)

Introduction to calculus including limits, continuity, differentiation, applications, and introduction to integration. Graphical, algebraic and numerical methods of solving problems.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III and satisfactory score on the Precalculus Proficiency Assessment; MATH 19 with a grade of C- or better to waive the exam; or MATH 18A and MATH 18B with a grade of C- or better in each to waive the exam.

Corequisite(s): MATH 30W.

Grading: Letter Graded

Note(s): MATH 30X is treated as a repeat for students who have taken MATH 30. MATH 30X is replacing MATH 30P and MATH 30PL.

MATH 31 - Calculus II

4 unit(s)

Definite and indefinite integration with applications. Sequences and series. Graphical, algebraic and numerical methods of solving problems.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): AP Calculus AB score 4 to 5, AP Calculus BC/AB Subscore 4-5, or MATH 30 or MATH 30X (with a grade of B or better).

Grading: Letter Graded

Note(s): Passing this course with a grade of "C-" or better course fulfills GE Area B4. Students who are repeating MATH 31 or MATH 31X are not eligible for this class and must take MATH 31X.

MATH 31W - Calculus II Workshop

1 unit(s)

Support for students to excel in Calculus II. Students work in groups on challenging calculus problems to help them understand the concepts in Calculus II more deeply and lay the groundwork for success in future math courses.

Lab 3 hours.

Course is repeatable for up to 3 units.

Corequisite(s): MATH 31X.

Grading: Credit/No Credit

MATH 31X - Calculus II

4 unit(s)

Definite and indefinite integration with applications. Sequences and series. Graphical, algebraic and numerical methods of solving problems.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): AP Calculus AB score 3 to 5, AP Calculus BC/AB Subscore 3-5, or MATH 30 or MATH 30X (with a grade of C- or better).

Corequisite(s): MATH 31W.

Grading: Letter Graded

Note(s): Passing this course with a grade of "C-" or better course fulfills GE Area B4. Students who are repeating MATH 31 or Math 31X are not eligible for this class and must take Math 31X.

MATH 32 - Calculus III

3 unit(s)

Functions of more than one variable, partial derivatives, multiple integrals and vector calculus. Graphical, algebraic and numerical methods of solving problems.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Score of 4 to 5 on the AP Calculus BC Exam; or MATH 31 or MATH 31X with a grade of B or better.

Grading: Letter Graded

Note(s): Students who are repeating MATH 32 must take MATH 32X.

MATH 32H - Honors Multivariable Calculus

4 unit(s)

Functions of more than one variable, partial derivatives, and multiple integrals. Vector fields, line and surface integrals, Green's Theorem, Stokes' Theorem, Divergence Theorem. Applications to engineering and science.

Misc/Lab: Lecture 3 hours/Lab 3 hours

Prerequisite(s): A score of 4 or 5 on the AP Calculus BC exam or Instructor Consent.

Grading: Letter Graded

MATH 32W - Calculus III Workshop

1 unit(s)

Designed to promote students to excel in Calculus III. Students work in groups on Calculus III material to help them understand Calculus III concepts more thoroughly.

Lab 3 hours.

Course is repeatable for up to 3 units.

Corequisite(s): MATH 32X.

Grading: Credit/No Credit

MATH 32X - Calculus III

3 unit(s)

Functions of more than one variable, partial derivatives, multiple integrals and vector calculus. Graphical, algebraic and numerical methods of solving problems.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Score of 3 to 5 on the AP Calculus BC Exam; or MATH 31 or MATH 31X with a grade of C- or better.

Corequisite(s): MATH 32W.

Grading: Letter Graded

MATH 33A - Ordinary Differential Equations for SCI & ENGR

3 unit(s)

First order differential equations, first order linear systems, second order linear equations, applications, Laplace transforms, series solutions.

Prerequisite(s): MATH 32 or MATH 32H or MATH 32X (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 33LA - Differential Equations and Linear Algebra

3 unit(s)

Matrices, determinants, systems of linear equations, vector geometry, linear transformations, eigenvalues and eigenvectors, diagonalization, first order differential equations, linear systems of differential equations, higher order differential equations, Laplace transforms.

Prerequisite(s): MATH 31 or MATH 31X (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 39 - Linear Algebra I

3 unit(s)

Matrices, systems of linear equations, vector geometry, matrix transformations, determinants, eigenvectors and eigenvalues, orthogonality, diagonalization, applications, computer exercises. Theory in R^n emphasized; general real vector spaces and linear transformations introduced.

Prerequisite(s): MATH 31 or MATH 31X (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 42 - Discrete Mathematics

3 unit(s)

Sets, logic, methods of proof including mathematical induction, functions, relations, elementary combinatorics, probability, Boolean algebras.

Prerequisite(s): Math Enrollment Category M-I or M-II and satisfactory score on the Precalculus Proficiency Assessment; AP Calculus AB score 4 to 5, AP Calculus BC score 4 to 5, or AP Pre-Calculus score 4 to 5 to waive the exam; MATH 19 with a grade of "B" or better to waive the exam; or MATH 18A and MATH 18B, with a grade of "B" or better in each to waive the exam.

Grading: Letter Graded.

Note(s): Students who are repeating MATH 42 and MATH 42X are not eligible for this class and must take MATH 42X.

Cross-listed with CS 42. Mathematics and Statistics is responsible for scheduling.

MATH 42W - Discrete Math Workshop

1 unit(s)

Designed to promote students to excel in Discrete Mathematics. Students work in groups on challenging discrete math problems to help them understand the concepts in discrete math more deeply and lay the groundwork for success in future courses.

Lab 3 hours.

Course is repeatable for up to 3 units.

Corequisite(s): MATH 42X.

Grading: Credit/No Credit

MATH 42X - Discrete Mathematics

3 unit(s)

Sets, logic, methods of proof including mathematical induction, functions, relations, elementary combinatorics, probability, Boolean algebras.

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III and satisfactory score on the Precalculus Proficiency Assessment; AP Calculus AB score 4 to 5, AP Calculus BC score 4 to 5, or AP Pre-Calculus score 4 to 5 to waive the exam; MATH 19 with a grade of C- or better to waive the exam; or MATH 18A and MATH 18B with a grade of C- or better in each to waive the exam.

Corequisite(s): MATH 42W.

Grading: Letter Graded.

Cross-listed with CS 42X. Mathematics and Statistics is responsible for scheduling.

MATH 50 - Scientific Computing I

2 unit(s)

Computer systems and structured programming, emphasizing solutions of problems in the atmospheric sciences using Python programming. Includes the UNIX operating system, mass data handling and data visualization.

Lecture 1 hour/Lab 3 hours.

Prerequisite(s): MATH 30 or MATH 30X.

Corequisite(s): For METR majors: MATH 31 or MATH 31X, METR 60, PHYS 50. For Climate Science majors: METR 60 and CHEM 1A.

Grading: Letter Graded

Cross-listed with CS 50 / METR 50. Meteorology and Climate Science is responsible for scheduling.

MATH 70 - Mathematics for Business

3 unit(s)

Systems of linear equations, financial mathematics, conceptual calculus, probability and statistics. Emphasis on business and economics applications with a focus on concepts and interpretation.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): MATH 18A or MATH 19 with a grade of B or better. A satisfactory score on the Precalculus Proficiency Assessment, or SAT Math score of 550+ (old version) or 570+ (revised score), or ACT Math score of 23+ waives this prerequisite.

Grading: Letter Graded

Note(s): Students repeating Math 70 are not eligible for this class and must take Math 70X.

MATH 70W - Mathematics for Business Workshop

1 unit(s)

Designed to help all students excel in Mathematics for Business. Students work in groups on challenging problems to help them understand the concepts in business math more deeply and lay the groundwork for success in future courses.

Lab 3 hours.

Course is repeatable for up to 3 units.

Corequisite(s): MATH 70X

Grading: Credit/No Credit

MATH 70X - Mathematics for Business

3 unit(s)

Systems of linear equations, financial mathematics, conceptual calculus, probability and statistics. Emphasis on business and economics applications with a focus on concepts and interpretation.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): MATH 18A or MATH 19 with a grade of C- or better. A satisfactory score on the Precalculus Proficiency Assessment, or SAT Math score of 550+ (old version) or 570+ (revised score), or ACT Math score of 23+ waives this prerequisite.

Corequisite(s): MATH 70W

Grading: Letter Graded

MATH 71 - Calculus for Business and Aviation

3 unit(s)

Functions and graphs, limits, continuity, differentiation, integration, partial differentiation. Emphasis on business and economics applications.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): MATH 18A or MATH 19 with a grade of B or better. A satisfactory score on the Precalculus Proficiency Assessment, or SAT Math score of 550+ (old version) or 570+ (revised score), or ACT Math score of 23+ waives this prerequisite. For detailed information and exceptions for the 2021-2022 Academic Year, visit sjsu.edu/math/calculus/Assessment.

Grading: Letter Graded

Note(s): Students repeating MATH 71 are not eligible for this class and must take MATH 71X.

MATH 71W - Calculus Workshop for Business/Aviation

1 unit(s)

Designed to help all students excel in Calculus for Business/Aviation. Students work in groups on challenging calculus problems to help them understand the concepts in calculus more deeply and lay the groundwork for success in future courses.

Lab 3 hours.

Course is repeatable for up to 3 units.

Corequisite(s): MATH 71X.

Grading: Credit/No Credit

MATH 71X - Calculus for Business and Aviation

3 unit(s)

Functions and graphs, limits, continuity, differentiation, integration, partial differentiation. Emphasis on business and economics applications.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): MATH 18A or MATH 19 with a grade of C- or better. A satisfactory score on the Precalculus Proficiency Assessment, or SAT Math score of 550+ (old version) or 570+ (revised score), or

ACT Math score of 23+ waives this prerequisite. For detailed information and exceptions for the 2021-2022 Academic Year, visit sjsu.edu/math/calculus/Assessment.

Corequisite(s): MATH 71W.

Grading: Letter Graded

MATH 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MATH 102 - Secondary School Mathematics

3 unit(s)

Secondary school mathematics from an advanced viewpoint, plus topics from higher mathematics. Emphasizes inductive reasoning in problem solving. Applications useful to junior and senior high school teachers.

Prerequisite(s): Equivalent of mathematics minor (with 9 upper division units) or instructor consent.

Grading: Letter Graded

MATH 105 - Concepts in Mathematics, Probability, Statistics

3 unit(s)

Introduction to functions and algebraic reasoning, introduction to probability, data, graphs, statistics, problem solving; technology integrated throughout the course. This course is intended for future elementary teachers. The sequence of MATH 12, MATH 105, and MATH 106 satisfies subject matter competence in K-8 mathematics.

Prerequisite(s): Two years of high school algebra, one year of high school geometry, MATH 12 with a "C-" or better.

Grading: Letter Graded

MATH 106 - Intuitive Geometry

3 unit(s)

Introductory geometry, measurement, inductive and deductive reasoning, introduction to transformations, and problem-solving techniques; technology integrated throughout the course. This course is intended for future elementary teachers. The sequence of MATH 12, MATH 105, and MATH 106 satisfies subject matter competence in K-8 mathematics.

Prerequisite(s): MATH 12 and MATH 105 with grades of "C-" or better

Grading: Letter Graded

MATH 108 - Introduction to Abstract Mathematics and Proofs

3 unit(s)

The course purpose is to develop students' mathematical maturity and skill with proofs. Material covered includes logic; set theory including functions, relations, and cardinality; the real number system, including the completeness axiom; and selected topics.

Prerequisite(s): MATH 31 or MATH 31X, and MATH 42 or MATH 42X (each with a grade of "C-" or better). Or instructor consent.

Grading: Letter Graded

MATH 112 - Vector Calculus

3 unit(s)

Vector fields, line and surface integrals, Green's Theorem, Stokes' Theorem, Divergence Theorem and advanced topics such as differential forms or applications to mechanics, fluid mechanics, or electromagnetism.

Prerequisite(s): MATH 32 or MATH 32X (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 115 - Modern Geometry and Transformations

3 unit(s)

Synthetic and analytic theory of projective transformations, similarities, Euclidian motions, inversive geometry and an introduction to non-Euclidean geometry.

Prerequisite(s): MATH 31 or MATH 31X (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 126 - Theory of Numbers

3 unit(s)

Divisibility, prime numbers, congruences of first and higher degrees, theorems of Fermat, Euler and Wilson. Quadratic residues.

Prerequisite(s): MATH 31 or MATH 31X, and MATH 42 or MATH 42X (each with a grade of "C-" or better). Or instructor consent.

Grading: Letter Graded

MATH 127 - Applied and Industrial Algebra

3 unit(s)

Fundamental topics of abstract algebra (groups, rings, fields) from the viewpoint of real-world application, such as coding theory, robotics, algorithm design, cryptography, integrated circuit design, and signal processing.

Prerequisite(s): MATH 42 or MATH 42X, and MATH 39 (each with a C- or better). Or instructor consent.

Grading: Letter Graded

MATH 128A - Abstract Algebra I

3 unit(s)

Group theory: permutation groups, abelian groups, morphism theorems, finite groups. Introduction to rings and fields.

Prerequisite(s): MATH 108 and MATH 39 (each with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 128B - Abstract Algebra II

3 unit(s)

Emphasis on rings, integral domains, fields, field extensions, Galois theory.

Prerequisite(s): MATH 128A (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 129B - Linear Algebra II

3 unit(s)

Continuation of MATH 39. Abstract vector spaces and linear transformations, diagonalization, Cayley-Hamilton theorem, minimal polynomials, Jordan canonical form. Selected topics from inner product and adjoint, duality, rational canonical form and applications.

Prerequisite(s): MATH 108 and MATH 39 (each with a grade of "C-" or better). Or instructor consent.

Grading: Letter Graded

MATH 131A - Introduction to Analysis

3 unit(s)

Properties of real numbers including completeness and compactness. Continuous functions, uniform continuity, the derivative.

Prerequisite(s): MATH 32 or MATH 32X, and MATH 108 (each with a grade of "C-" or better). Or instructor consent.

Grading: Letter Graded

MATH 131B - Introduction to Real Variables

3 unit(s)

The theory of the Riemann integral, sequences and series of functions, spaces of functions.

Prerequisite(s): MATH 131A (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 132 - Advanced Calculus

3 unit(s)

Calculus of several variables; Jacobian, inverse and implicit function theorems, contracting mapping theorem, change of variables in integration and applications.

Prerequisite(s): MATH 32 or MATH 32X, and MATH 39 (each with a grade of "C-" or better). Or instructor

consent.

Grading: Letter Graded

MATH 133B - Partial Differential Equations

3 unit(s)

Partial differential equations of physics and engineering, Fourier series, Legendre polynomials, Bessel functions, orthogonal functions, the Sturm-Liouville equation.

Prerequisite(s): One of MATH 33A, MATH 33LA, or MATH 34 ; and one of MATH 112 or MATH 132. All with a grade of C- or better.

Grading: Letter Graded

MATH 134 - Ord. Diff. Eqns and Dynamical Systems

3 unit(s)

First order differential equations and phase lines. Linear systems. Phase portraits. Classification of planar linear systems. Existence and uniqueness of solutions. Flows. Stability of equilibria and periodic orbits. Applications in the physical sciences and engineering.

Prerequisite(s): MATH 39 and one of MATH 33A, MATH 33LA, or MATH 34 (with a grade of C- or better). Allowed Declared Major: Mathematics major or minor.

Grading: Letter Graded

MATH 138 - Complex Variables

3 unit(s)

Analytic functions, complex integration, residues and power series.

Prerequisite(s): MATH 32 or MATH 32X (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 142 - Introduction to Combinatorics

3 unit(s)

Sets, permutations, combinations, probability, mathematical induction, counting techniques, generating functions, partitions, recurrence relations, inclusion-exclusion. Polya's theorem and applications to computer science, mathematics, engineering and physical sciences.

Prerequisite(s): MATH 31 or MATH 31X, and MATH 42 or MATH 42X (each with a grade of "C-" or better). Or instructor consent.

Grading: Letter Graded

MATH 143C - Numerical Analysis and Scientific Computing

3 unit(s)

Development and comparison of important algorithms for scientific computing in terms of efficiency, accuracy and reliability. Topics include nonlinear equations, interpolation, approximation theory, differentiation, integration, differential equations, numerical stability and error analysis. Substantial assignments using contemporary software packages and professional subprogram libraries.

Prerequisite(s): MATH 32 or MATH 32X, one of CS 22A, MATH 50, CS 46A, CS 49C or CS 49J, one of MATH 33A, MATH 33LA, or MATH 34 (with a grade of "C-" or better in each); or instructor consent.

Grading: Letter Graded

Cross-listed with CS 143C / METR 143C. Mathematics and Statistics is responsible for scheduling.

MATH 143M - Numerical Analysis and Scientific Computing

3 unit(s)

Development and comparison of important algorithms for scientific computing in terms of efficiency, accuracy and reliability. Topics include systems of linear equations-direct and iterative methods, least squares problems, eigenvalues and eigenvectors, numerical stability and error analysis. Substantial assignments using contemporary software packages and professional subprogram libraries.

Prerequisite(s): MATH 39, one of CS 22A, MATH 50, CS 46A or CS 49C (each with a grade of "C-" or better). Or instructor consent.

Grading: Letter Graded

Cross-listed with CS 143M. Mathematics and Statistics is responsible for scheduling.

MATH 146 - An Introduction to Mathematical Cryptography

3 unit(s)

Introduction to mathematics that has been useful in cryptography with a focus on the underlying mathematics (abstract algebra, number theory, probability, and combinatorics), and supporting applications (encryption, hash functions, blockchain). Additional topics may be covered.

Prerequisite(s): MATH 42 or MATH 42X, and MATH 39 (each with C- or better), or instructor consent.

Grading: Letter Graded

Note(s): Recommended (but not required) one of MATH 108, MATH 126, MATH 127, MATH 142, MATH 163.

MATH 150 - Theory of Interest

3 unit(s)

Measurement of interest; time value of money; present and future values of cash flows; applications to annuities, loans, sinking funds, bonds, and portfolios; duration and immunization.

Prerequisite(s): MATH 161A or ISE 130, or instructor consent

Grading: Letter Graded

MATH 151 - Fundamentals of Data Science

3 unit(s)

Introduction to data mining for Applied Mathematics major. Topics: data cleaning, proximity and similarity measures, dimension reduction, regression, classification, clustering, privacy, and ethics.

Prerequisite(s): MATH 39, MATH 163, and MATH 167R, all with a C- or better, or instructor consent.

Allowed Declared Major: Applied Mathematics or Mathematics major or any Mathematics minor.

Grading: Letter Graded

MATH 161A - Applied Probability and Statistics I

3 unit(s)

Descriptive and inferential statistics. Collection and analysis of data, discrete and continuous probability models, random variables, Central Limit Theorem, confidence intervals, hypothesis testing.

Prerequisite(s): MATH 31 or MATH 31X (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 161B - Applied Probability and Statistics II

3 unit(s)

A continuation of MATH 161A. Two sample confidence intervals and hypothesis tests, analysis of variance, simple and multiple regression, chi-square tests of homogeneity and goodness-of-fit, other topics as time permits. Use of statistical software is integral to the course. Student project required.

Prerequisite(s): MATH 161A (with a grade of "C-" or better), or instructor consent

Grading: Letter Graded

MATH 161C - Applied Probability and Statistics III

3 unit(s)

A continuation of Math 161B. Parametric and non-parametric procedures, model adequacy checking and model validation for linear models, models for non-continuous response, categorical data analysis. Use of statistical software is integral to the course.

Prerequisite(s): MATH 161B (with C- or better) or equivalent (with instructor consent).

Grading: Letter Graded

MATH 162 - Statistics for Bioinformatics

3 unit(s)

Introduction to the theory and applications of statistical methodology in the biological sciences. Topics include inference, stochastic processes, Markov chains, hidden Markov models, clustering, and gene expression analysis. Applications to current molecular biology and genetics problems. No biology background required.

Prerequisite(s): MATH 161A (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 163 - Probability Theory

3 unit(s)

Probability axioms; random variables; marginal and conditional density and distribution functions; binomial, geometric, Poisson, gamma and normal probability laws; mathematical expectations, moment generating functions; limit theorems; sampling distributions.

Prerequisite(s): MATH 32 or MATH 32X, and MATH 161A (each with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 163W - Probability Workshop

1 unit(s)

Corequisite workshop designed to help all students succeed in MATH 163. Students work in groups on probability problems and review material from MATH161A and MATH 32 or MATH 32X as necessary.

Course is repeatable for up to 2 units.

Grading: Credit/No Credit

MATH 164 - Mathematical Statistics

3 unit(s)

Statistical models, point estimation, finite- and large-sample properties of point estimators, best unbiased estimation, sufficient statistics, interval estimation, and tests of hypotheses.

Prerequisite(s): MATH 163 (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 167PS - Introduction to Python Programming and SQL

3 unit(s)

Introduction to Python: data types, control flow, functions. Python for data science: manipulating arrays and data frames (Numpy and Pandas), data visualization (Matplotlib). Applications in Machine Learning (SciKitLearn). SQL basics: designing and accessing a relational database, performing database administration, and writing queries of intermediate complexity.

Prerequisite(s): MATH 39, MATH 161A, and MATH 167R, all with a C- or better, or instructor consent.

Allowed declared major: Mathematics, Statistics, Data Science, or Bioinformatics.

Grading: Letter Graded

MATH 167R - Statistical Programming with R

3 unit(s)

Introduction to the R programming language. Topics include data structures, reading and writing data, databases, data visualization, accessing and creating packages, programming structures and functions.

Prerequisite(s): MATH 161A with a grade of "C-" or better. Allowed Declared Major: Mathematics major/minor, MS Statistics, MS Data Science, or MS Bioinformatics.

Grading: Letter Graded.

MATH 170 - Mathematical Modeling for the Life Sciences

3 unit(s)

Mathematical models used in biology and other life sciences, discrete and continuous processes, mathematical methods for analyzing solutions to the above models, interpretation of mathematical results.

Prerequisite(s): MATH 39 and one of MATH 33A or MATH 34 (both with a grade of C- or better); or MATH 33LA (with a grade of C- or better).

Grading: Letter Graded

MATH 177 - Linear and Non-Linear Optimization

3 unit(s)

Linear inequalities, the simplex method and other algorithms, duality, integer optimization, convex optimization, quadratic optimization, game theory.

Prerequisite(s): MATH 32 and MATH 39, both with a grade of C- or better.

Grading: Letter Graded

MATH 178 - Mathematical Modeling

3 unit(s)

Basic modeling techniques including graphing, proportion, curve fitting and interpolation, optimization, probability and computer simulation, derivatives and differences. Technology will be incorporated to model applied problems from business/economics, physical/life/social sciences and engineering.

Prerequisite(s): MATH 39 (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

MATH 179 - Introduction to Graph Theory

3 unit(s)

Hamiltonian and Eulerian properties, matching, trees, connectivity, coloring problems and planarity. Emphasis on algorithms and applications, including optimal network flows.

Prerequisite(s): MATH 42 or MATH 42X, and MATH 39 (each with a grade of "C-" or better). Or instructor consent.

Grading: Letter Graded

MATH 180 - Individual Studies

1-4 unit(s)

Individual study in a specific field. Not available to Open University Students.

Course may be repeated but only a total of 4 units may count towards the degree.

Prerequisite(s): Department chair consent.

Grading: Credit/No Credit.

MATH 180H - Individual Studies for Honors

3 unit(s)

Senior project on advanced topics in mathematics as determined by the instructor. Written paper and oral presentation of the project required. Intended for students graduating with departmental honors.

Course may be repeated but only 3 units may count towards the degree.

Prerequisite(s): At least junior standing as mathematics major. GPA of 3.5 or higher in the major and department chair consent.

Grading: Credit/No Credit

MATH 180R - Undergraduate Research in Mathematics

1-4 unit(s)

Advanced work in specific fields with variable units 1 to 4. Students will work on research topics in mathematics which will vary depending the instructor(s).

Course may be repeated but only a total of 4 units may count towards the degree

Prerequisite(s): Mathematics major/minor or consent of instructor

Grading: Credit/No Credit

MATH 185 - Special Topics in Mathematics

3 unit(s)

Selected topics in Mathematics. Topics vary each semester. Course is repeatable for a maximum total of 12 units of credit.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Suitable upper division background in mathematics set by instructor.

Grading: Letter Graded

MATH 188I - Student Internships

3 unit(s)

Professional work experience in an area relevant to the students degree objectives. A written report, oral report and evaluation by a supervisor will be used to demonstrate that the goals of the internship experience have been met.

Course may be repeated 3 times for a total of 9 units.

Prerequisite(s): Math department project coordinator consent.

Grading: Credit/No Credit

MATH 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MATH 203 - Applied Mathematics, Computation, and Statistics Projects

3 unit(s)

Supervised teamwork to solve a substantial problem in mathematics or computer science usually supplied by an outside agency such as a local company. The number of different projects offered and the topics will

vary widely. A project usually continues for two consecutive semesters.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit/RP.

MATH 221A - Higher Algebra I

3 unit(s)

Topics from groups, rings, integral domains, modules, fields, vector spaces.

Prerequisite(s): MATH 128B or instructor consent.

Grading: Letter Graded

MATH 221B - Higher Algebra II

3 unit(s)

Continuation of MATH 221A with additional advanced topics in algebra selected by instructor.

Prerequisite(s): MATH 221A or instructor consent.

Grading: Letter Graded

MATH 226 - Theory of Numbers

3 unit(s)

Advanced topics in number theory selected by the instructor. Emphasis may be in algebraic number theory (e.g. Diophantine equations), analytic number theory (e.g. the prime number theorem), and/or computational number theory (e.g. cryptography).

Prerequisite(s): MATH 126 and MATH 128A or instructor consent.

Grading: Letter Graded

Note(s): Alternate years.

MATH 229 - Advanced Matrix Theory

3 unit(s)

Eigenvalues, unitary equivalence and Schur's theorem. Normal, Hermitian and symmetric real matrices. Positive definite matrices, polar and singular value factorizations, and selected topics at the discretion of the instructor.

Prerequisite(s): MATH 129B or instructor consent.

Grading: Letter Graded

MATH 231A - Real Analysis

3 unit(s)

Sigma algebras, construction of measures, differentiation, product measures, integration theory, the spaces L^1 and C .

Prerequisite(s): MATH 131B or instructor consent.

Grading: Letter Graded

MATH 231B - Functional Analysis

3 unit(s)

Function spaces and their duals, operators on function spaces, applications to analysis (classical and functional) and topics selected at the discretion of the instructor.

Prerequisite(s): MATH 231A or instructor consent.

Grading: Letter Graded

MATH 233A - Applied Mathematics I

3 unit(s)

Derivation of the partial differential equations of classical mathematical physics. Existence and uniqueness of solutions of first order ordinary and partial differential equations. The classical theory of initial and boundary value problems for hyperbolic, parabolic and elliptic equations. Fourier series and transforms. Nonlinear partial differential equations.

Prerequisite(s): MATH 133B or instructor consent.

Grading: Letter Graded

MATH 234 - Advanced Dynamical Systems

3 unit(s)

Continuous and discrete dynamical systems with applications. Topics include stability of equilibria and closed orbits, structural stability, applications in classical mechanics, biology and engineering, including control systems.

Prerequisite(s): MATH 134 or instructor consent.

Grading: Letter Graded

Note(s): Alternate years.

MATH 238 - Advanced Complex Variables

3 unit(s)

A course specializing in one or more of the advanced branches of the theory of complex functions.

Prerequisite(s): MATH 138 or instructor consent.

Grading: Letter Graded

Note(s): Alternate years.

MATH 243A - Numerical Solution of PDEs

3 unit(s)

Finite difference methods applied to parabolic, elliptic and hyperbolic equations including numerical methods for solving the discretized problem, convergence, stability, error control, and applications.

Prerequisite(s): MATH 143C or MATH 143M or instructor consent.

Grading: Letter Graded

MATH 243M - Numerical Linear Algebra

3 unit(s)

Advanced topics in numerical linear algebra.

Prerequisite(s): MATH 143C or MATH 143M; and instructor consent

Grading: Letter Graded

MATH 250 - Mathematical Data Visualization

3 unit(s)

Matrix computing in software, data plotting in 3 dimensions or less, advanced linear algebra, dimensionality reduction, visualization of high dimensional data, and spectral clustering.

Prerequisite(s): MATH 32 and MATH 39 (each with a grade of B or better), and MATH 163 (with a grade of C or better).

Grading: Letter Graded

MATH 251 - Statistical and Machine Learning Classification

3 unit(s)

Dimensionality reduction, instance-based classification, discriminant analysis, logistic regression, support vector machine, kernel methods, ensemble learning, neural networks and deep learning, classification of nonnumeric data.

Prerequisite(s): MATH 164 and MATH 250.

Grading: Letter Graded

MATH 252 - Cluster Analysis

3 unit(s)

Cluster analysis techniques. Dissimilarities and distances. Hierarchical clustering, distance-based clustering, fuzzy clustering, spectral clustering, subspace clustering, categorical data clustering. Clustering method for high dimensional datasets.

Prerequisite(s): MATH 32 or MATH 32H or MATH 32X, MATH 39 (each with a grade of "B" or better), MATH 163 and MATH 167R or CS 122. Or instructor consent.

Grading: Letter Graded

MATH 257 - Multivariate Data Analysis

3 unit(s)

Multivariate normal distribution, Hotelling's T-squared distribution, data reduction techniques including principal component and factor analysis, canonical correlation analysis, discrimination and classification techniques. Intensive use of computer analysis and real data sets. As time permits, advanced topics chosen by instructor. Possible topics include basis functions, derivative estimation, functional principal components, functional linear model.

Prerequisite(s): MATH 163 and MATH 261A (each with a grade of "B" or better), or instructor consent.

Grading: Letter Graded

MATH 258 - Categorical Data Analysis

3 unit(s)

Distributions for categorical data, descriptive and inferential methods for contingency tables, introduction to generalized linear models, logit models for binary data, and loglinear models for count data.

Prerequisite(s): MATH 261A with a grade of "B" or better

Grading: Letter Graded

MATH 261A - Regression Theory and Methods

3 unit(s)

Simple linear regression, multiple regression, indicator variables, influence diagnostics, transformations, assumption analysis, generalized linear models, nonlinear regression, CART, hypothesis testing, confidence and prediction intervals, variable selection and model building.

Prerequisite(s): MATH 39, and either MATH 161A or MATH 164 (each with grade "B" or better), MATH 163, MATH 167R.

Corequisite(s): MATH 163 and/or MATH 167R may be taken concurrently.

Grading: Letter Graded

MATH 261B - Design and Analysis of Experiments

3 unit(s)

Principles, construction and analysis of experimental designs. ANOVA; randomized blocks, Latin squares, factorial, nested and other designs; fixed and random effects, multiple comparisons, repeated measures. Expected mean squares. Diagnostics and model comparison.

Prerequisite(s): MATH 261A with grade of "B" or better.

Pre/Corequisite(s): MATH 164

Grading: Letter Graded

MATH 263 - Stochastic Processes

3 unit(s)

Introductory course in stochastic processes and their applications. The course will cover random walks, discrete time Markov chains, the Poisson process, continuous time Markov processes, renewal theory and queuing theory.

Prerequisite(s): MATH 39 and MATH 163 (each with a grade of "B" or better).

Grading: Letter Graded

MATH 264 - Bayesian Data Analysis

3 unit(s)

A graduate-level introduction to Bayesian statistical methods for inference. Exchange-ability. Prior, likelihood, posterior and predictive distributions. Hierarchical models. Model checking.

Prerequisite(s): MATH 164 with a "B" or better

Grading: Letter Graded

MATH 265 - Time Series Theory and Methods

3 unit(s)

Analysis of correlated data in time, trends, seasonal patterns, periodicity, autocorrelation, spectral/frequency analysis, filtering, ARIMA models, state-space models, forecasting. Applications from various fields including economics, signal processing, finance, atmospheric science.

Prerequisite(s): MATH 261A with a grade of "B" or better

Grading: Letter Graded

MATH 267 - Computational Statistics

3 unit(s)

Simulation and Monte Carlo methods, Markov chain Monte Carlo, bootstrap and resampling, optimization, and special topics.

Prerequisite(s): MATH 163, MATH 167R, and MATH 261A each with a grade of "B" or better

Grading: Letter Graded

MATH 269 - Statistical Consulting

3 unit(s)

Theoretical and practical aspects of statistical consulting. Development through classwork, group discussion, role-playing and real consulting activities, of tools necessary to conduct effective consulting sessions, present oral arguments and written reports, and work collaboratively to solve problems.

Prerequisite(s): MATH 163, MATH 164, MATH 261A, MATH 261B (each with a grade of "B" or better); and instructor consent.

Grading: Credit/No Credit

Note(s): this course is normally taken in the last semester of the MS Statistics program.

MATH 275A - Topology

3 unit(s)

Topological spaces and associated concepts (e.g., subspaces, product spaces, quotient spaces); continuous functions; compactness, connectedness (including path connectedness) and their local versions; countability and separation axioms; compactifications and Tychonoff's Theorem; paracompactness and metrization theorems.

Prerequisite(s): MATH 131A with a grade of "B" or better; or instructor consent

Grading: Letter Graded

MATH 275B - Advanced Topics in Topology

3 unit(s)

A course specializing in one or more topics from advanced topology such as homotopy and the fundamental group, homology groups of spaces, continuum theory, function spaces, metrization, dimension theory, manifolds, topological groups.

Prerequisite(s): MATH 275A or instructor consent

Grading: Letter Graded

Note(s): Alternate years.

MATH 279A - Graph Theory

3 unit(s)

Advanced course in graph theory covering graphs, digraphs, trees, networks, connectedness, eulerian circuits, hamiltonian cycles, graph embeddings, matchings, factorizations, graph colorings and Ramsey theory.

Prerequisite(s): MATH 179, or both MATH 142 and an upper division algebra class, or instructor consent.

Grading: Letter Graded

Note(s): Alternate years.

MATH 279B - Advanced Graph Theory

3 unit(s)

Advanced topics in modern graph theory selected by instructor. Possible topics are algebraic graph theory, random graph theory, matroid theory, ramsey theory, expander graphs, and others.

Prerequisite(s): MATH 279A or instructor consent.

Grading: Letter Graded

MATH 280 - Graduate Individual Studies

1-3 unit(s)

Individual study in a specific field.

Course may be repeated but only a total of 3 units may count towards the degree.

Prerequisite(s): Department chair consent. Not available to Open University Students.

Grading: Credit/No Credit.

MATH 281 - Research Seminar

1-3 unit(s)

Weekly participation in the department research seminar. Topics will focus on recent developments in mathematics and emphasis will be placed on written and oral presentations.

Course may be repeated but only a total of 3 units may count towards the degree.

Prerequisite(s): Instructor Consent.

Grading: Letter Graded.

MATH 285 - Advanced Topics in Mathematics

3 unit(s)

Selected topics in Mathematics. Topics vary each semester. A maximum of 12 units may be repeated.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Suitable upper division background in mathematics set by instructor.

Grading: Letter Graded

MATH 285A - Advanced Topics in Applied Mathematics

3 unit(s)

Selected topics in Applied Mathematics. Topics vary each semester.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Upper-division coursework in applied mathematics or instructor consent.

Grading: Letter Graded

MATH 285M - Advanced Topics in Pure Mathematics

3 unit(s)

Selected topics in Pure Mathematics. Topics vary each semester.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Upper-division coursework in mathematics or instructor consent.

Grading: Letter Graded

MATH 287 - Professional Development in College Teaching

1 unit(s)

Required for all teaching assistants in the master's program. Practical and technical aspects of college teaching; current pedagogical techniques and educational issues.

Course may be repeated for credit for up to 2 units.

Corequisite(s): TA position in the Mathematics and Statistics Department

Grading: Credit/No Credit

MATH 288I - Statistics Internships

3 unit(s)

Professional work experience under the supervision of a statistician.

Course may be repeated 3 times for a total of 9 units but may only count once towards the degree.

Prerequisite(s): Graduate standing and MS Statistics Project Coordinator consent.

Grading: Mandatory Credit/No Credit/RP

MATH 288J - Applied Mathematics Internship

3 unit(s)

Professional work experience under the supervision of an applied mathematician.

Course may be repeated but only 3 units may count towards the degree.

Prerequisite(s): Graduate standing in the MS Math program and instructor consent.

Grading: Credit/No Credit/RP.

MATH 295E - Mathematics Comprehensive Exam Preparation

3 unit(s)

Preparation for Mathematics Master's Comprehensive Examination. Review of topics and representative problems covered by the various parts of the Exam. CR grade assigned when student has passed both parts of the Comprehensive Exam. Successful completion satisfies graduate Culminating Experience requirement.

Prerequisite(s): Approval of Mathematics Graduate Advisor is required. Students must file for Advancement to Candidacy before enrolling. Not open to students electing Thesis/Writing Project option.

Grading: Mandatory Credit/No Credit/RP

MATH 297A - Preparation for Writing Project, Research Project or Thesis

3 unit(s)

Supervised individual research and project work to prepare for a master's writing project, research project or thesis.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Fully classified standing in the MS/MA Math or MS Statistics program, department chair consent.

Corequisite(s): GVAR

Grading: Credit/No Credit/RP.

MATH 298 - Special Study

1-4 unit(s)

Advanced individual research and writing projects.

Course may be repeated but only a total of 4 units may count towards the degree.

Prerequisite(s): Advancement to candidacy for the MA or MS degree, MATH 297A and instructor consent.

Not available to Open University Students.

Grading: Credit/No Credit/RP.

MATH 299 - Master's Thesis

1-4 unit(s)

Course may be repeated but only a total of 4 units may count towards the degree.

Prerequisite(s): Advancement to candidacy for the MA or MS degree, MATH 297A and instructor consent.

Not available to Open University Students.

Grading: Credit/No Credit/RP.

MATH 1001S - Supported Instruction for MATH 1

1 unit(s)

Reviews relevant background material prior to the corresponding content for MATH 1.

Misc/Lab: Activity 2 hours.

Course may be repeated for credit for up to 3 units.

Corequisite(s): MATH 1. Required corequisite for enrollment category M-III and M-IV students in MATH 1.

Grading: Credit/No Credit/No Degree Credit.

Note(s): No Degree Credit.

MATH 1010AS - Support Course for Math 10A

1 unit(s)

Support course that reviews relevant background material prior to the corresponding content for MATH 10A.

Activity 2 hours

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Required for MATH 10A students in Math Enrollment Categories III/IV.

Grading: Credit/No Credit/No Degree Credit

MATH 1010DS - Support Course for MATH 10D

1 unit(s)

Support course that reviews relevant background material prior to the corresponding content for MATH 10D.

Activity 2 hours.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Required for MATH 10D students in Math Enrollment Categories III/IV.

Grading: Credit/No Credit/No Degree Credit

MATH 1010PS - Support Course for Math 10P

1 unit(s)

Corequisite support course to review relevant background material prior to the corresponding content for MATH 10P.

Activity 2 hours

Course may be repeated for credit for up to 3 units.

Corequisite(s): Required for MATH 10P students in Math Enrollment Categories III/IV.

Grading: Credit/No Credit/No Degree Credit

MATH 1015W - Statway Supplemental Activity

1 unit(s)

Supplemental activity course for Statway students who complete UNVS 15F (Statway A) with a grade below C-. Includes review of UNVS 15F and supporting activities for UNVS 15.

Misc/Lab: Activity 2 hours.

Course may be repeated for credit for up to 3 units.

Corequisite(s): UNVS 15

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Cross-listed with UNVS 1015W . Mathematics and Statistics is responsible for scheduling.

MATH 1018AS - Support Course for MATH 18A

1 unit(s)

Support course that reviews relevant background material prior to the corresponding content for MATH 18A. Required for Category M-III and Category M-IV students in MATH 18A.

Misc/Lab: Activity 2 hours.

Course may be repeated for credit for up to 3 units.

Corequisite(s): MATH 18A.

Grading: Credit/No Credit/No Degree Credit

Note(s): Credit/No credit, No Degree Credit.

MATH 1019S - Supported Instruction for MATH 19

1 unit(s)

Reviews relevant background material prior to the corresponding content for MATH 19.

Misc/Lab: Activity 2 hours.

Course may be repeated for credit for up to 3 units.

Corequisite(s): Required corequisite for Math Enrollment Category III/IV students in MATH 19.

Grading: Credit/No Credit/No Degree Credit

MATH 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

MTED 280 - Research in Math Education

3 unit(s)

Theories of learning mathematics; recent trends in mathematics curriculum and pedagogy; types of research in mathematics education; methods of conducting research in mathematics education; developing research questions; conducting library research; and synthesis of research in various areas of mathematics education.

Prerequisite(s): Graduate-level core class for the MA Math, MS Math, or MS Statistics, or instructor consent.

Grading: Letter Graded

Mathematics Education

MTED 184S - Math Education Phase II Seminar

1 unit(s)

This seminar will support the student teaching field experience. Students will be asked to extend their pedagogical content knowledge in light of their phase II experiences and will be supported in the preparation of their Performance Assessment for California Teachers.

Prerequisite(s): EDSC 184X and good standing in the Secondary Education Credential program

Corequisite(s): MTED 184Y and/or MTED 184Z

Grading: Credit/No Credit

MTED 184X - Student Teaching Phase I

4 unit(s)

Student teaching in Mathematics Education (Phase I) is designed to provide students with the experiences they need to be successful in Phase II. During the Phase I semester, student teachers work with their mentor teacher in a mathematics classroom one period each day, with additional times set aside each week to confer, debrief, and plan.

Prerequisite(s): MTED 394

Grading: Credit/No Credit

MTED 184Y - Student Teaching II - Classroom Teaching

4 unit(s)

Minimum 80-120 class periods of classroom teaching, laboratory or field teaching in appropriate single subjects, grades K-12 and related teaching activities. Attendance at a weekly seminar is required.

Prerequisite(s): MTED 394 and joint approval of Mathematics and Education departments.

Grading: Credit/No Credit

MTED 184Z - Student Teaching III - Classroom Teaching

4 unit(s)

Same as MTED 184Y, including the seminar, but in a different course. May be in a different school.

Prerequisite(s): MTED 394 and joint approval of the Mathematics and Teacher Education Departments.

Grading: Credit/No Credit

MTED 394 - Secondary Mathematics Methods

3 unit(s)

The place and function of mathematics in secondary education, improvement and evaluation of instruction. Teaching the subject matter of secondary mathematics.

Prerequisite(s): Passing score on all 3 CSET math exams or be within 3 courses of completing the subject matter preparation program, or instructor consent.

Grading: Letter Graded.

MTED 394F - Middle School Mathematics Methods

3 unit(s)

The place and function of mathematics in middle grades education, improvement and evaluation of instruction. Teaching the subject matter of middle grades mathematics.

Prerequisite(s): EDEL 108D, Passing scores on CSET I and II or Instructor consent.

Grading: Letter Graded

Mechanical Engineering

ME 20 - Design and Graphics

2 unit(s)

Introduction to design and graphical solutions to three-dimensional design problems involving points, lines, surfaces and solids. Development of visualization and technical sketching skills in conjunction with orthographic and pictorial projections. Focus on computer-aided design and graphical analytical methods.

Lecture 1 hour/lab 3 hours.

Pre/Corequisite(s): ENGR 10 for Engineering majors; no requisite for Technology majors.

Grading: Letter Graded

ME 30 - Computer Applications

3 unit(s)

Using a computer to solve engineering problems through programming and the use of engineering application procedures. Use of procedural and informational problem solving methods and practices applied to software design, application, programming and testing.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Grading: Letter Graded

ME 41 - Machine Shop Operations and Safety

1 unit(s)

Introduction to basic machine shop safety and skills. Fabrication of mechanical components and assemblies from engineering drawings, performing tolerance inspection and developing fabrication process plans.

3 hours lab.

Course is repeatable for up to 3 units.

Prerequisite(s): ME 20 or TECH 20A or CE 20 or equivalent.

Grading: Letter Graded

Cross-listed with TECH 41. Technology is responsible for scheduling.

ME 42 - Manufacturing and Machine Shop Projects and Practices

1 unit(s)

Individual manufacturing processes and machine shop practices. Fabrication of mechanical components and assemblies in fulfillment of senior, course, special, and approved student club assignments and projects.

Misc/Lab: 3 hours lab

Course may be repeated for credit for up to 4 units.

Prerequisite(s): TECH 41/ME 41 (with grade "C-" or better).

Grading: Credit/No Credit

Cross-listed with TECH 42. Technology is responsible for scheduling.

ME 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ME 100 - Mechanical Engineering Career Development

1 unit(s)

Further intellectual, personal, and professional growth in Mechanical Engineering. Directed discussions and activities focused on building professional presence and communication strategies for a professional career starting with the internship and ending with employment post-graduation.

Prerequisite(s): ENGL 1B or second semester Composition Course, Mechanical Engineering Majors Only.

Grading: Credit/No Credit

ME 101 - Dynamics

3 unit(s)

Vector mechanics. Two and three dimensional motion of particles and rigid bodies. Force, energy and momentum principles.

Prerequisite(s): CE 95 or CE 99, and MATH 32 or MATH 32X (each with a grade of "C-" or better).
Sophomore or upper division standing. Allowed Declared Majors: Any Engineering.

Grading: Letter Graded

ME 101H - Honors Dynamics

3 unit(s)

Kinematics and dynamics of particles and rigid bodies. Mass distribution, forces, moments, and torques. Principles of work, power, potential and kinetic energy, impulse, and momentum. Laws of motion. Computational solutions to equations governing dynamic systems. Demonstrations and physical examples.

Prerequisite(s): MATH 32 or MATH 32X and either CE 95 or CE 99 (each with a grade of "B" or better).

Grading: Letter Graded

ME 105 - Introduction to Mechatronic Systems

3 unit(s)

Mechatronics for non-ME students. Topics include analog and digital electronics, sensors, actuators, microcontrollers, microcontroller interfacing to electromechanical systems, computer modeling/simulation, and signal processing/control. Includes hands-on laboratory experiments with components used in the design of mechatronic products.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): EE 98, CMPE 30 (or equivalent).

Grading: Letter Graded.

ME 106 - Fundamentals of Mechatronics Engineering

4 unit(s)

Foundational concepts in mechatronics including analog and digital electronics, sensors, actuators, microprocessors and microprocessor interfacing to electromechanical systems. Hands-on laboratory experiments with components and measurement equipment used in the design of mechatronic products.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): EE 98 and ME 30 (or CS 49C or EE 30 or CMPE 30 or their equivalents) (each with a grade of "C-" or better). For Engineering Technology majors: TECH 60 and MATH 71 or MATH 71X (each with a grade of 'C-' or better).

Grading: Letter Graded

Cross-listed with EE 106. Mechanical Engineering is responsible for scheduling.

ME 109 - Heat Transfer in Electronics

3 unit(s)

Introduction to thermodynamics and heat transfer, including conduction, convection and radiation. An emphasis on applications for electronics; including heat transfer in computer components, heat sinks, liquid and air cooling and heat pipes.

Prerequisite(s): EE 98, PHYS 51 and one of the following courses: MATH 39 or MATH 33LA. Allowed Declared Majors: Computer Engineering, Electrical Engineering, Engineering, Industrial and Systems Engineering.

Grading: Letter Graded

Cross-listed with CHE 109. Chemical Engineering is responsible for scheduling.

ME 110 - Manufacturing Processes

3 unit(s)

Fundamentals of manufacturing processes such as machining, forming, casting, molding and welding. Surface treatments, powder-based processes, and microfabrication methods. Materials behavior and selection for manufacturing. Geometric dimensions and tolerancing.

Prerequisite(s): ME 20 with a grade of "C-" or better.

Pre/Corequisite(s): MATE 25.

Grading: Letter Graded

Cross-listed with ISE 110. Mechanical Engineering is responsible for scheduling.

ME 111 - Fluid Mechanics

3 unit(s)

Fluid properties, statics, dynamics of fluids; continuity, linear and angular momentum and energy principles. Viscous and non-viscous flow. Pumps, turbines, flow in pipes and around submerged obstacles. Dimensional analysis and dynamic similitude.

Prerequisite(s): CE 95 or CE 99, and MATH 32 or MATH 32X (each with a grade of "C-" or better).

Sophomore or upper division standing. Allowed Declared Majors: Engineering, Civil Engineering, Industrial and Systems Engineering, Materials Engineering, Mechanical Engineering.

Grading: Letter Graded

ME 113 - Thermodynamics

4 unit(s)

Properties of simple compressible substances, ideal gas and other equations of state. First and Second Laws of Thermodynamics, energy, and irreversibility. Power cycles and refrigeration cycles. Gas mixtures, gas-vapor mixtures, and air conditions processes.

Prerequisite(s): PHYS 52, and MATH 32 or MATH 32X (with a grade of 'C-' or better in each).

Pre/Corequisite(s): ME 111

Grading: Letter Graded

ME 114 - Heat Transfer

3 unit(s)

Conduction, convection and radiation heat transfer with applications. Analytical, experimental, and computational methods of analyzing heat transfer behavior.

Prerequisite(s): MATH 33A or MATH 33LA, and ME 113 (each with a grade of 'C-' or better).

Grading: Letter Graded

ME 115 - Thermal Engineering Laboratory

1 unit(s)

Thermodynamics and heat transfer experiments. Temperature, pressure, and flow rate measurements. Technical reports and presentations.

Lab: 3 hours.

Pre/Corequisite(s): ME 114.

Grading: Letter Graded.

ME 120 - Experimental Methods

2 unit(s)

Theory and practice of experimental methods and sensors for mechanical measurements; statistical and uncertainty analysis; computer-hosted data acquisition, processing and analysis; formal report writing and presentations.

Lecture 1 hour/lab 3 hours.

Prerequisite(s): CE 112 and ENGR 100W (with a grade of 'C-' or better in each).

Pre/Corequisite(s): ME 130. AE majors may use AE 162 and AE 168 to satisfy corequisite requirements.

Grading: Letter Graded

ME 130 - Applied Engineering Analysis

3 unit(s)

Analytic models for physical systems in mechanical engineering. Practical interpretations of analytical solutions. Introduction to linear algebra and statistics.

Prerequisite(s): MATH 33A and ME 101 (each with a grade of "C-" or better). Allowed Declared Majors: Mechanical Engineering.

Pre/Corequisite(s): ME 113.

Grading: Letter Graded

ME 135 - Introduction to Composite Materials

3 unit(s)

Introduction to theory, application, and design with composite materials, including high performance resin-matrix fibrous composites and metal-matrix materials. Topics include materials, test techniques, environmental effects, design considerations, and application requirements.

Prerequisite(s): MATE 25 with a grade of "C-" or better.

Grading: Letter Graded

Cross-listed with MATE 135. Materials Engineering is responsible for scheduling.
Sustainability Related - SDG 12: Responsible Consumption and Production

ME 136 - Design for Manufacturability

3 unit(s)

Principles and practice of design and manufacturability, design parameters; manufacturing techniques; reliability; design for quality, assembly and environmental considerations; case study projects and laboratory activities.

Prerequisite(s): ME 110 and either ME 154 or AE 114, all with C- or better.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

ME 147 - Dynamic Systems Vibration and Control

3 unit(s)

Mathematical representation of dynamic systems. Damped and undamped free and forced vibrations for single and multiple degree of freedom systems. Vibration control and isolation. Dynamic analysis of control systems. Transient response, frequency response and the stability criteria. State-variables approach. Feedback and feedforward compensation. Emphasis on engineering problems involving analysis and design.

Prerequisite(s): ME 130 (with a grade of 'C-' or better). Upper Division Standing. Allowed Declared Majors: Aerospace Engineering, Mechanical Engineering.

Grading: Letter Graded

ME 149 - Engineering Acoustics

3 unit(s)

Generation, transmission and absorption of sound. Noise measurement. Applications to architectural design, control and reduction of noise.

Prerequisite(s): ME 130. Upper division standing.

Grading: Letter Graded

ME 154 - Mechanical Engineering Design

4 unit(s)

Introduction to the design and analysis of mechanisms and machine elements. Linkage synthesis. Kinematic and dynamic analysis of mechanisms. Application of statics, dynamics, strength of materials, static failure theories and fatigue theory to the design of machine components. Threaded fasteners. Group design project.

Prerequisite(s): ME 20, ME 101, CE 112, MATE 25, all with a C- or better. Junior or senior only. Allowed Declared Majors: Any Engineering.

Pre/Corequisite(s): TECH 41/ME 41.

Grading: Letter Graded

ME 157 - Mechanical System Design

3 unit(s)

Introduction to the mechanical design process. Design and selection of specific machine components including springs, bearings, brakes, clutches and gears. Introduction to fatigue design using fracture mechanics. Application of plastics, composite materials and finite element methods in design. Group design project. Computer applications in the design process and in design optimization.

Prerequisite(s): ME 130, ME 154 with a grade of 'C-' or better.

Pre/Corequisite(s): ME 110.

Grading: Letter Graded

ME 160 - Introduction to Finite Element Method

3 unit(s)

Matrix algebra, interpolation functions. Deformation and stress analysis, using truss, beam, plate and axisymmetric elements.

Prerequisite(s): ME 20, CE 112, and either ME 130 or MATH 39, (each with a grade of "C-" or better).

Grading: Letter Graded

ME 165 - Computer-Aided Design in Mechanical Engineering

3 unit(s)

Theory and application of CAD. 2-dimensional and 3-dimensional modeling, commercial CAD software. Application to finite element analysis.

Prerequisite(s): ME 20, CE 112, and either ME 130 or MATH 39, (each with a grade of "C-" or better).

Allowed Declared Majors: Aerospace Engineering, Mechanical Engineering

Grading: Letter Graded

ME 167 - Introduction to Engineering Biomechanics

3 unit(s)

Introduction to the mechanical behavior of biological systems including cells, biological fluids, blood vessels, blood circulation, and the muscular-skeletal system. Skeletal kinematics and dynamics. Application of engineering fundamentals to the human body and functional relationships between biological structures.

Prerequisite(s): ME 101 or BME 165 with a C- or better.

Grading: Letter Graded

ME 168 - Microfluid Fabrication and Design

1 unit(s)

Hands-on design, fabrication, and testing of microfluidic devices. Processes including photolithography, soft lithography, and plasma bonding. Design problems for microfluidic devices. Introduction to microfluidics simulation.

Prerequisite(s): MATE 25 or MATE 153 or MATE 129 / EE 129.

Grading: Letter Graded

Cross-listed with EE 168 / MATE 168. Mechanical Engineering is responsible for scheduling.

ME 169 - Microelectromechanical Systems Fabrication and Design

1 unit(s)

Hands-on design, fabrication, and testing of micro electro-mechanical systems (MEMS). Processes including photolithography, etching, and metal deposition applied to MEMS. Design problems for MEMS transducer components. Introduction to MEMS simulation.

Misc/Lab: Lab 3 hours.

Prerequisite(s): MATE 25 or MATE 153 or MATE 129 / EE 129.

Grading: Letter Graded

Cross-listed with EE 169 / MATE 169. Mechanical Engineering is responsible for scheduling.

ME 170 - Solar Energy Engineering

3 unit(s)

Fundamentals of solar energy engineering, basic principles, design and operation of solar systems. Solar energy generation, storage and system efficiency.

Prerequisite(s): EE 98 and either ME 109, ME 114 or CHE 190 (with a grade of "C-" or better in each).

Grading: Letter Graded

Sustainability Focused - SDG 7: Affordable and Clean Energy

ME 171 - Energy Management in Manufacturing

3 unit(s)

Working principles of major energy consuming equipment in manufacturing facilities; fundamentals of energy analysis; energy saving measures in industrial facilities; utility analysis for natural gas and electricity; lighting, air conditioning, pumps, fans, motors, process heating and cooling, compressed air, steam.

Prerequisite(s): MATH 32, PHYS 51, and declared engineering major, or instructor's consent.

Grading: Letter graded.

ME 172 - Alternative and Renewable Energy Resources

3 unit(s)

An introduction to alternative energy sources such as solar, wind, nuclear, geothermal, hydroelectric, biomass and fuel cell. Stationary power generation and storage.

Prerequisite(s): ME 114 or CHE 109/ME 109 or CHE 190.

Grading: Letter Graded

Sustainability Focused - SDG 7: Affordable and Clean Energy

ME 180 - Individual Studies

1-3 unit(s)

Individual work on special topics. By arrangement.

Prerequisite(s): Upper division standing and instructor consent. Allowed Declared Majors: Aerospace Engineering, Mechanical Engineering. Not available to Open University Students.

Grading: Credit/No Credit

ME 181 - Fundamentals of Biosensors

3 unit(s)

Operating principles, design and applications of the most commonly used biosensors: Electrochemical (Potentiometric, Amperometric, Voltammetric), Optical-based (Fluorescence, Electrophoresis, and Fiber Optic), Piezoelectric-based (Mechano, QCM Enzyme/Cell, Acoustic), and AFM (Atomic Force Microscopy) biosensors/transducers. Immunosensors and biosensors for virus detection. Biosensor signal processing and electronics. Biosensor design, materials, and applications. Case studies to explore state-of-the-art biosensor products. Invited speakers to share their first-hand experience in biosensor design and manufacturing. Term projects to design practical and functional biosensors.

Prerequisite(s): EE 98 with a C- or better

Grading: Letter Graded

ME 182 - Thermal Systems Design

3 unit(s)

Integration of thermodynamics, fluid mechanics, heat transfer and economics in the design of energy conversion and transfer systems, e.g., power generation, electronics and human thermal control.

Prerequisite(s): ME 114, and either ME 111 or AE 160 (with a grade of 'C-' or better in each).

Grading: Letter Graded

ME 183 - HVAC Systems Design

3 unit(s)

Calculation of heating and cooling loads. Psychrometrics and human comfort. Heating, ventilation and air conditioning systems and equipment. Design of secondary systems for heating and cooling of buildings.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Pre/Corequisite(s): ME 114. Junior or senior only. Allowed Declared Major: Mechanical Engineering.

Grading: Letter Graded

ME 185 - Hybrid and Electric Vehicle Fundamentals

3 unit(s)

This course covers the key technical fundamentals of hybrid and electric vehicles including propulsion system design, controls, batteries and storage management, electric machines and power electronics. Review of critical technologies and components used in modern hybrid and electric vehicles. Hands-on experience through demonstrations, laboratory activities, and a term project. Guest speakers will present technical seminars on selected topics.

Prerequisite(s): EE 98 and ME 130, both with a C- or better

Grading: Letter Graded

Sustainability Focused - SDG 13: Climate Action

ME 186 - Automotive Engineering

3 unit(s)

Overview of automotive engineering including aerodynamics, structures, suspension, steering, brakes and drive-train. Application of engineering principles in automotive design and analysis. Use of vehicle dynamic simulation for performance analysis.

Prerequisite(s): ME 114, ME 130, ME 154 with a grade of C- or better in each.

Grading: Letter Graded

ME 187 - Automatic Control Systems Design

3 unit(s)

Analysis of dynamic systems in time and frequency domain. Design of automatic control systems. Analog and digital control systems design. Computer aided control system design and performance evaluation.

Prerequisite(s): ME 147 with a grade of C- or better. Junior or senior only. Allowed Declared Majors: Aerospace Engineering, Mechanical Engineering.

Grading: Letter Graded

ME 190 - Mechatronics System Design

3 unit(s)

Process modeling from test data. Computer-aided dynamic system control analysis and design. Application and integration of micro-controller for digital process and servo control. Development of smart and intelligent products with micro-controller.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): ME 106, ME 130 (with a grade of 'C-' or better).

Pre/Corequisite(s): ME 147.

Grading: Letter Graded

ME 192 - Robotics and Manufacturing Systems

3 unit(s)

Scientific and engineering principles of robotics in the area of mechanical manipulation, dynamics, sensing, actuation, control, computer vision and manufacturing automation application. Motor, motion control, digital control devices application and integration.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): ME 106 and ME 130 (with a grade of 'C-' or better in each).

Grading: Letter Graded

ME 192I - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ME 195A - Senior Design Project I

3 unit(s)

First half of a one-year team project carried out under faculty supervision. Project proceeds from problem definition to analysis, design and validation, experimentation including possible construction and testing.

Misc/Lab: Lab 3 hours.

Satisfies SJSU Studies S: Self, Society & Equality in U.S. when taken as part of the ME major sequence.

Prerequisite(s): ME 114, ME 154 and ENGR 100W (with a grade of 'C-' or better in each).

Pre/Corequisite(s): ME 120, good standing in the program with an approved major form.

Grading: Letter Graded

Note(s): ME 195A and ME 195B sequence must be completed in the same academic year. Meets SJSU Studies Area S and V when course is taken in combination with: ME 195B, ENGR 195A and ENGR 195B.

ME 195B - Senior Design Project II

3 unit(s)

Continuation of ME 195A. Culmination of project requiring a formal report consisting of documentation of project results and oral presentation.

Misc/Lab: Lab 3 hours.

Satisfies SJSU Studies V: Cultures and Global Understanding (when taken with ME major sequence).

Prerequisite(s): ME 195A with a C- or better

Grading: Letter Graded.

Note(s): ME 195A and B sequence must be completed in the same academic year. Meets SJSU Studies Area S and V when course is taken in combination with: ME 195B, ENGR 195A and ENGR 195B.

ME 198 - Technology and Civilization

3 unit(s)

History, development, and use of technology in different cultures. Technology's impact on society, global environment, the workplace, cultural values, gender roles, and newly industrialized countries of the world.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all

SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CMPE 198 / ENGR 198 / TECH 198. Technology is responsible for scheduling.

Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

ME 199 - Special Topics in Mechanical Engineering

3 unit(s)

Special Topics in Mechanical Engineering. Content varies from semester to semester. A total of six units may be repeated.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor Consent.

Grading: Letter Graded

ME 201 - Project Planning

3 unit(s)

Preparation for independent projects, research investigations, and professional engineering proposals. Review of scholarly literature. Development of formal objective statements and research hypotheses. Planning and articulation of tangible deliverables, resources, tasks, and milestones.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Good standing in the Mechanical Engineering, MS program.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

ME 210 - Advanced Thermodynamics

3 unit(s)

Application of the first and second laws of thermodynamics to the analysis of engineering systems. Equations of state and thermodynamic property relations. Chemical equilibrium and combustion.

Prerequisite(s): BSME or Instructor Consent.

Grading: Letter Graded

ME 211 - Advanced Heat Transfer

3 unit(s)

Conduction, convection and radiation heat transfer, including conjugate problems. Numerical methods and use of the computer to solve heat transfer problems.

Prerequisite(s): ME 114 or equivalent.

Grading: Letter Graded

ME 221 - Viscous Flow Analysis and Computation

3 unit(s)

The Navier-Stokes equations for laminar flow; exact solutions, lubrication theory and boundary layer forms with computer-based solution techniques. Reynolds-averaging and turbulent flow; solution of the Reynolds-averaged full and boundary layer equations using computers.

Prerequisite(s): Mechanical Engineering BS or instructor consent.

Grading: Letter Graded

ME 230 - Advanced Mechanical Engineering Analysis

3 unit(s)

Designed to supplement and enrich students with advanced mathematical methods in treating problems selected from various areas of mechanical engineering. Topics discussed will include Fourier series, special functions, solutions to partial differential equations and numerical methods.

Prerequisite(s): BSME or BSAE or Instructor Consent.

Grading: Letter Graded

ME 231 - Machine Learning and Optimization in Mechanical Engineering

3 unit(s)

Introduction to the basics of machine learning and optimization employed in engineering. Modules are comprised of lectures and labs including linear/nonlinear programming, convex/nonconvex/multi-objective/global optimization, linear models, neural networks, nonparametric models, semi-supervised learning, and high-performance computing.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

ME 232 - Deep Learning in Mechanical Engineering

3 unit(s)

Introduction to the basics of deep learning methods employed in engineering and exposure to leading-edge research. Modules presented via lectures and labs cover background, feed forward neural networks (NN), convolutional NN, recurrent NN, autoencoders, generative NN, and reinforcement learning.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): Graduate standing or instructor consent

Grading: Letter Graded

ME 240 - Rigid Body Dynamics

3 unit(s)

Introduction to Euler's method, Lagrange's equations of motion and Hamilton's principle. Three-dimensional dynamics in vector and tensor notation. Multi-body dynamics. Application to engineering problems including numerical solutions.

Prerequisite(s): BSME or Instructor Consent.

Grading: Letter Graded

ME 243 - Vibration of Mechanical Systems

3 unit(s)

Vibration of MDOF (Multi-degree of Freedom) systems. Eigenvalue problems. Modal analysis of damped systems. Superposition and direct integration methods. Complex frequency response. Random vibration of MDOF systems. Shock and impulse. Vibration of strings, rods and beams.

Prerequisite(s): BSME degree or instructor consent.

Grading: Letter Graded

ME 250 - Precision Machine Design

3 unit(s)

Principles of precision machine design. Exact kinematic constraint. Error motions of a machine. Integration of mechanical design, materials, sensors, and metrology for precision applications.

Prerequisite(s): BSME or Instructor Consent.

Grading: Letter Graded

ME 256 - Product Design and Development

3 unit(s)

Introduction to the product development process as followed in the industry, latest developments in identifying product opportunities, understanding customer requirements, converting them to technical requirements, functional modeling, concept generation, selection and evaluation, latest trends in product design, patenting and intellectual property rights, group design project.

Prerequisite(s): Graduate standing with solid modelling knowledge

Grading: Letter Graded

ME 260 - Applied Stress Analysis

3 unit(s)

Introduction to stress analysis techniques, including advanced strength of materials, energy methods and theory of elasticity. Elastic-plastic stresses, creep, fatigue, fracture mechanics, failure analysis.

Prerequisite(s): BSME or Instructor Consent. Allowed Declared Majors: Aerospace Engineering, Mechanical Engineering.

Grading: Letter Graded

ME 265 - Computer-Aided Mechanical Engineering Design

3 unit(s)

Integrated approach to CAD including: overview of CAD, numerical techniques for CAD, computer graphics and design, principles and management of design database systems, finite element analysis and CAD, design optimization, computer-aided linkage design and integrated CAD systems.

Prerequisite(s): BSME or Instructor Consent. Allowed Declared Majors: Aerospace Engineering,

Mechanical Engineering.

Grading: Letter Graded

ME 267 - Engineering Biomechanics

3 unit(s)

Application of engineering mechanics to human body structure and function, involving 3-D kinematics, deformable bodies, viscoelastic behavior, and non-Newtonian fluids. Modeling of hard and soft tissues and analysis of response to loading conditions. Design considerations for biomedical and orthopedic devices.

Prerequisite(s): Graduate standing and CE 112 or equivalent.

Grading: Letter Graded

ME 268 - 3D Printing and Additive Manufacturing

3 unit(s)

Application of fundamental technologies in 3D printing and additive processes for polymers, metals, composites, and biomaterials. Equipment, process, and material selection for design applications such as electronics, medical devices, aerospace, vehicles and consumer products. Hands-on experience to design and perform a 3D scanning and converting digital data into physical objects.

Prerequisite(s): Graduate Standing or Instructor Consent

Grading: Letter Graded

ME 271 - Computational Fluid Dynamics for ME

3 unit(s)

Introduction to methods and techniques for computational solutions of fluid mechanics and heat transfer problems. Model problems from mechanical engineering are used to study the interaction of physical processes and numerical techniques. A commercial CFD package is used for analysis.

Prerequisite(s): BSME or instructor's consent

Grading: Letter Graded

ME 273 - Finite Element Methods in Engineering

3 unit(s)

Introduction into various finite element methods for developing stiffness equation. Truss, beam, 2-D, 3-D and axisymmetric elements. Applications and case studies.

Prerequisite(s): BSME or Instructor Consent.

Grading: Letter Graded

ME 274 - Advanced Finite Element Methods In Engineering

3 unit(s)

Advanced concepts in finite element analysis, assembly modeling, contact and welded joints, anisotropy and composites, structural dynamics, nonlinear modeling, linear and nonlinear multiphysics coupled heat transfer and fluid flow, thermal stress analysis, and electromechanical coupling.

Prerequisite(s): ME 160 or ME 273, or instructor consent.

Grading: Letter Graded

ME 280 - Automatic Control Engineering

3 unit(s)

Formulation of multiple dynamic systems in state space form. System transient response, stability, controllability and observability. Design of control system using conventional and modern methods. Optimum system design. Computer aided dynamic system analysis, control system design and simulation.

Prerequisite(s): BSME or Instructor Consent. Allowed Declared Majors: Aerospace Engineering, Mechanical Engineering.

Grading: Letter Graded

ME 281 - Advanced Control System Design

3 unit(s)

Establishment of design criteria. Digital control system design based on conventional and modern approaches. Intelligent control system design. Digital control system hardware and software. Case studies. Microprocessor implementation of control systems.

Prerequisite(s): ME 280 or equivalent.

Grading: Letter Graded

ME 282 - Nonlinear and Adaptive Control

3 unit(s)

Practical considerations in control systems design including nonlinearities, parametric uncertainties, and disturbances; phase plane and Lyapunov stability methods for nonlinear systems; sliding mode, adaptive, and adaptive-sliding control design with real-world applications; nonlinear observers, and repetitive learning control.

Prerequisite(s): ME 280 or equivalent.

Grading: Letter Graded

ME 283 - Automatic Control of Manufacturing Processes

3 unit(s)

Develops general concepts for control of manufacturing processes. The concepts of and tools for process modeling, process optimization and process control. Emphasizes the integrated approach combining statistical process control (SPC) and automatic process control.

Prerequisite(s): BSME or Instructor Consent.

Grading: Letter Graded

ME 284 - Sensor Technology and Principles

3 unit(s)

Sensors and principles, including mechanical and magnetic sensors, optical sensors, chemical sensors, and bio sensors; Sensor circuitry, signal characterization and processing; Sensor design, fabrication and applications.

Prerequisite(s): BSME or Instructor Consent.
Grading: Letter Graded

ME 285 - Mechatronic Systems Engineering

3 unit(s)

Introduction of mechatronic systems. Combine hardware, software and system integration. Subjects include basic circuits, logic gates, OpAmps, encoder/decoder, DC and stepper motor, A/D and D/A, C-language, interfacing and control. Hands-on lab practices.

Misc/Lab: Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BSME or Instructor Consent.
Grading: Letter Graded

ME 286 - Autonomous and Connected Vehicles

3 unit(s)

Application of fundamentals of robotics, computer vision, and mechanical engineering in a vehicle-to-vehicle and vehicle-to-infrastructure connected environment for safe-driving and reducing traffic congestion. Defining levels of autonomy in relation to driver-assist and self-driving technologies. Occupant monitoring, distracted driving, and government regulations.

Prerequisite(s): Graduate Standing or Instructor Consent
Grading: Letter Graded

ME 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

ME 295A - Mechanical Engineering Project I

3 unit(s)

Advanced individual work in mechanical engineering, including but not limited to research, design, development, and simulation studies.

Prerequisite(s): Advancement to Candidacy for Master's Degree in Mechanical Engineering; written proposal approved by instructor and graduate advisor. Not available to Open University Students.
Grading: Letter Graded/Incomplete.

ME 295B - Mechanical Engineering Project II

3 unit(s)

Continuation of ME 295A. Students complete the in-depth project, write a detailed engineering report and make a comprehensive presentation.

Prerequisite(s): ME 295A. Not available to Open University Students.

Grading: Letter Graded/RP.

ME 297 - Special Topics in Mechanical Engineering

3 unit(s)

Special topics in Mechanical Engineering. Content varies from semester to semester.

Prerequisite(s): Instructor Consent.

Grading: Letter Graded

ME 298 - Special Project in Mechanical Engineering

1-3 unit(s)

Advanced individual work in mechanical engineering.

Prerequisite(s): Consent of project advisor. Not available to Open University Students

Grading: Mandatory Credit/No Credit/RP

ME 299 - Master's Thesis

3 unit(s)

Advanced individual work in mechanical engineering for Plan A.

Course may be repeated for credit 2 times for a total of 6 units.

Prerequisite(s): Advancement to candidacy for master's degree, consent of thesis committee, and written proposal approved by Graduate Program Advisor. Not available to Open University students.

Grading: Mandatory Credit/No Credit/RP

ME 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project beyond minimum required units, for cases in which final deliverables are still in progress.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): RP grade in a preceding thesis or project semester.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Medical Product Development Management

SMPD 202T - MPDM Seminars: Biomedical Business

3 unit(s)

Special Topics seminar in the management principles and practices of medical product development. Repeatable for credit when topic changes.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

SMPD 281A - Clinical Development Seminar I

3 unit(s)

Provides a comprehensive overview of the regulated medical product development process. Topics include initial drug development/device invention to drug/device approval and post-market surveillance. Discussions include non-clinical and clinical studies, regulations, clinical indication determination, research methodology and ethical conduct.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Admission to MPDM program or certificate.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

SMPD 281B - Clinical Development Seminar II

2 unit(s)

Current practices for medical product development and the clinical and regulatory pathways required for approval in the USA; including non-clinical study design and GMP process. Emphasis on oral and written communication. Presentations from experts in the field.

Lecture 2 hours/Activity 4 hours.

Prerequisite(s): Admission to the Medical Product Development Management program and completion of SMPD 281A.

Grading: Letter Graded.

SMPD 283A - Regulatory Affairs I, Biopharmaceutical

3 unit(s)

Provide foundational knowledge of the pharmaceutical, biotechnology and biomedical industries with focus on company organization, product development and commercialization-associated activities such as chemical synthesis, device prototyping, quality assurance, regulatory affairs, manufacturing, control, marketing, and post-marketing surveillance.

Grading: Letter Graded

SMPD 283B - Regulatory Affairs II Device-Diagnostics

3 unit(s)

Overview of laws and regulations enforced by the US Food and Drug Administration (FDA) and other

Regulatory Agencies as they relate to biotechnology, medical device and diagnostic industries

Prerequisite(s): Admission to the MPDM program.

Grading: Letter Graded

SMPD 285 - MPDM Research / Practicum

1 unit(s)

Independent research project / practicum to explore deeper understanding or breadth of experience in medical product development management.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Admission to MPDM program.

Grading: Credit/No Credit

SMPD 286 - Statistical Methods in Clinical Trials

3 unit(s)

Overview of statistical methods used in the design and interpretation of clinical trials of drugs and medical devices.

Prerequisite(s): Admission to the MPDM program.

Grading: Letter Graded

SMPD 287 - Informatics in Drug and Device Development

3 unit(s)

Provides business and regulatory perspectives on electronic information technologies, processes and standards in the conduct of clinical trials. Special emphasis: data collection, clinical trial & data management randomization and drug supply, statistical processes, safety databases and electronic regulatory submission, electronic records and signatures, sys validation processes, and data standards.

Prerequisite(s): Admission to the MPDM program and completion of SMPD 286.

Grading: Letter Graded

SMPD 289A - Special Topics in Clinical Trials Management I

2 unit(s)

Seminar focusing on critical issues in clinical development. This programmatic capstone series of seminars challenges the students to demonstrate a mature, professional manner and technical proficiency in the field. Emphasis on oral and written communications. Course includes numerous presentations by industry experts.

Lecture 2 hours/Activity 4 hours.

Prerequisite(s): Admission to MPDM program and completion of SMPD 285.

Grading: Letter Graded.

SMPD 289B - Clinical Trials Seminar II

3 unit(s)

Capstone course of the MPDM program

Prerequisite(s): Admission to MPDM program.

Grading: Letter Graded

Meteorology and Climate Science

METR 10 - Weather and Climate

3 unit(s)

A descriptive introduction to the atmosphere, with emphasis on weather phenomena, climate, climate change, forecasting and air pollution.

Satisfies B1: Physical Science.

Grading: Letter Graded

Sustainability Related - SDG 13: Climate Action

METR 12 - Global Warming: Science and Solutions

3 unit(s)

Examination of past, present and future climates. Examination of global warming and mitigation strategies.

Satisfies B1: Physical Science.

Grading: Letter Graded

Sustainability Focused - SDG 13: Climate Action

METR 40 - Weather Seminar

1 unit(s)

Meteorology program planning; careers in Meteorology; a survey of major problems in the atmosphere; faculty research programs; department, college and university resources, survival in the university; strategies for success.

Grading: Credit/No Credit

METR 50 - Scientific Computing I

2 unit(s)

Computer systems and structured programming, emphasizing solutions of problems in the atmospheric sciences using Python programming. Includes the UNIX operating system, mass data handling and data visualization.

Lecture 1 hour/Lab 3 hours.

Prerequisite(s): MATH 30 or MATH 30X.

Corequisite(s): For METR majors: MATH 31 or MATH 31X, METR 60, PHYS 50. For Climate Science

majors: METR 60 and CHEM 1A.

Grading: Letter Graded

Cross-listed with CS 50 / MATH 50. Meteorology and Climate Science is responsible for scheduling.

METR 51 - Scientific Computing II

2 unit(s)

Computer systems and advanced programming in Python emphasizing solutions of problems in the atmospheric sciences. Other related topics include UNIX scripting, advanced data visualization and basic HTML techniques. Introduction to Fortran.

Lecture 1 hour/Lab 3 hours.

Prerequisite(s): METR 50 (or equivalent).

Corequisite(s): For Meteorology and Climate Science majors: METR 61.

Grading: Letter Graded

METR 55 - Introduction to Broadcast Meteorology

3 unit(s)

Introduction to broadcast meteorology. Students learn to prepare and present a professional weathercast with emphasis on communication skills, computer graphics, and on-camera delivery. Students emulate weather forecasts using presentation software and also train on weather graphics systems used in broadcast media.

Prerequisite(s): METR 10 recommended, but not required.

Grading: Letter Graded

METR 60 - Meteorology and Climate Science I

3 unit(s)

Quantitative introduction to atmospheric science for Meteorology and Climate Science majors. Includes topics such as thermodynamics, radiation, and analysis of weather and climate data.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): MATH 30 or MATH 30P or MATH 30PL or MATH 30X (and PHYS 2B for Climate Science Concentration).

Corequisite(s): MATH 31 or MATH 31X, PHYS 50, METR 50 (or CHEM 1A and METR 50 for Climate Science Concentration).

Grading: Letter Graded

METR 61 - Meteorology and Climate Science II

2 unit(s)

A continuation of METR 60, introducing Meteorology and Climate Science majors to quantitative aspects of the science.

Prerequisite(s): METR 60, CHEM 1A.

Corequisite(s): METR 51, MATH 32 or MATH 32X, PHYS 52 or PHYS 2B, METR 163.

Grading: Letter Graded

METR 100W - Writing Workshop: Meteorological Reports

3 unit(s)

Introduction to scientific writing, research methods and preparation of technical reports in the meteorology field.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Corequisite(s): METR 121A or METR 135, or instructor consent.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

METR 112 - Global Climate Changes

3 unit(s)

Formation and evolution of the atmosphere. Climate changes in the Earth's past. Interactions between climate and life. Anthropogenic climate change.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 13: Climate Action

METR 113 - Atmospheric Pollution

3 unit(s)

Descriptive discussion of the sources, effects and fates of pollutants in the atmosphere. Interaction of pollutants and weather systems, including acid precipitation, ozone destruction; air pollution policy and regulations.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENVS 113. Meteorology and Climate Science is responsible for scheduling.

Sustainability Focused - SDG 3: Good Health and Well-Being

METR 115 - Wildfire in the Earth System

3 unit(s)

Introduces students to the science of wildland fire on earth and in various ecosystems. Topics include extreme fire behavior in a changing climate, fire weather, fire danger, and national policies on fire suppression strategies and prescribed fire use in land management.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 13: Climate Action

METR 121A - Dynamic Meteorology

4 unit(s)

Theoretical examination of the motion and behavior of the atmosphere. Governing equations and applications; vorticity; waves; numerical prediction; baroclinic instability.

Prerequisite(s): METR 51, METR 61.

Corequisite(s): MATH 33A.

Grading: Letter Graded

Note(s): Year course.

METR 121B - Dynamic Meteorology

3 unit(s)

Theoretical examination of the motion and behavior of the atmosphere. Governing equations and applications; vorticity; waves; numerical prediction; baroclinic instability.

Prerequisite(s): METR 121A.

Grading: Letter Graded

Note(s): Year course.

METR 123 - Advanced Climatology

3 unit(s)

The physical basis of climate with emphasis on the theory of global warming.

Prerequisite(s): METR 61.

Grading: Letter Graded

Sustainability Focused - SDG 13: Climate Action

METR 125 - Physical Meteorology

3 unit(s)

Cloud and precipitation physics, atmospheric electricity, optics and acoustics.

Prerequisite(s): METR 121A or instructor consent.

Grading: Letter Graded

METR 127 - Introduction to Atmospheric Chemistry

3 unit(s)

Integrated scientific background for understanding the factors determining atmospheric composition and its environmental implications for air quality, biogeochemical cycling, and climate. Topics covered include greenhouse gases and climate, local and regional ozone pollution, long-range pollution transport, acid rain, atmospheric particulate matter pollution, and stratospheric ozone depletion.

Prerequisite(s): METR 60 and CHEM 1A.

Grading: Letter Graded

METR 130 - Boundary Layer Meteorology

3 unit(s)

Structure of the atmospheric planetary boundary layer with applications to air pollution, agriculture and cities; meso-circulations such as sea breeze.

Prerequisite(s): METR 121B or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

METR 131 - Air Pollution Meteorology

3 unit(s)

Quantitative description of contaminants in the atmosphere: sources, dispersion and sinks; their effects on atmospheric energy balance and condensation.

Prerequisite(s): METR 121B or instructor consent.

Grading: Letter Graded

Cross-listed with CHE 131 / ENVS 131. Meteorology and Climate Science is responsible for scheduling.

Sustainability Focused - SDG 3: Good Health and Well-Being

METR 135 - The Global Carbon Cycle

3 unit(s)

A quantitative examination of the global carbon cycle through the solid earth, atmosphere, oceans, and biosphere.

Prerequisite(s): METR 61.

Grading: Letter Graded

Sustainability Related - SDG 13: Climate Action

METR 136 - Applied Statistics and Analysis in Meteorology

3 unit(s)

Applications of statistical methods to analysis of meteorological and climatological data; use of the internet to obtain climate data; objective forecasting methods; elementary decision theory; data analysis using contemporary computer software.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): METR 61, or STAT 95 and METR 12 (or METR 112), and upper division standing (for ENVS majors).

Grading: Letter Graded

METR 143C - Numerical Analysis and Scientific Computing

3 unit(s)

Development and comparison of important algorithms for scientific computing in terms of efficiency, accuracy and reliability. Topics include nonlinear equations, interpolation, approximation theory, differentiation, integration, differential equations, numerical stability and error analysis. Substantial assignments using contemporary software packages and professional subprogram libraries.

Prerequisite(s): MATH 32 or MATH 32X, one of CS 22A, MATH 50, CS 46A, CS 49C or CS 49J, one of MATH 33A, MATH 33LA, or MATH 34 (with a grade of "C-" or better in each); or instructor consent.

Grading: Letter Graded

Cross-listed with CS 143C / MATH 143C. Mathematics and Statistics is responsible for scheduling.

METR 150 - Computers in Meteorology III

3 unit(s)

Computer applications to advanced problems in atmospheric science, including specialized computer systems, mass data handling, weather data communications.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): MATH 043, METR 51 or instructor consent.

Grading: Letter Graded

Note(s): Offered only occasionally.

METR 155 - Remote Sensing

3 unit(s)

This course will cover the background of remote sensing, current status of sensors and platforms, and recent satellite-based results on climate change.

Prerequisite(s): METR 121A.

Grading: Letter Graded

METR 161 - Introduction to Hydrometeorology

3 unit(s)

Survey of the transfer of water and energy between the land surface and the lower atmosphere, including

the processes of precipitation, evaporation, and stream flow. Water resources and policy initiatives incorporated where applicable.

Grading: Letter Graded

METR 163 - Meteorological Instrumentation

3 unit(s)

Measurement techniques and instruments used in atmospheric and climate sciences, using lecture, laboratory and field work. Students will learn techniques of instrument calibration, deployment, and data acquisition.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): METR 60 (or PHYS 2B; CHEM 1A; STAT 95; AND METR 12 or METR 112 for ENVS majors).

Corequisite(s): METR 61 (METR majors)

Grading: Letter Graded

METR 164 - Introduction to Fire Weather

3 unit(s)

Quantitative description of weather conditions that lead to fire danger around the world and atmospheric conditions leading to extreme fire behavior.

Prerequisite(s): METR 61.

Grading: Letter Graded

METR 165 - Mountain Meteorology

3 unit(s)

Examination of atmospheric processes in mountain environments including micro and mesoscale wind systems, precipitation processes and convection, snow and avalanche mechanics.

Prerequisite(s): METR 61.

Corequisite(s): METR 121A.

Grading: Letter Graded

METR 168A - Climate Action and Leadership I

6 unit(s)

Scientific and social scientific approaches to the process and effects of global climate change: Climate changes in the Earth's past, interactions between climate and life, anthropogenic climate change, socioeconomic contexts of environmental effects, cultural influences on climate change mitigation strategies.

Satisfies SJSU Studies S+V: Self, Society & Equality in the U.S. + Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with COMM 168A / ENVS 168A. Communication Studies is responsible for scheduling.
Sustainability Focused - SDG 13: Climate Action

METR 168B - Climate Action and Leadership II

3 unit(s)

Scientific and social scientific approaches to the process and effects of global climate change: Climate changes in the Earth's past, interactions between climate and life, anthropogenic climate change, socioeconomic contexts of environmental effects, cultural influences on climate change mitigation strategies.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of COMM 168A / ENVS 168A / METR 168A with a C- or better. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with COMM 168B / ENVS 168B. Communication Studies is responsible for scheduling.
Sustainability Focused - SDG 13: Climate Action

METR 170A - Weather Briefing

1 unit(s)

Weather briefing associated with METR 121A, METR 121B.

Misc/Lab: Lab 3 hours.

Corequisite(s): METR 121A.

Grading: Credit/No Credit

Note(s): Year course 1 unit each semester.

METR 170B - Weather Briefing

1 unit(s)

Weather briefing associated with METR 121A, METR 121B.

Misc/Lab: Lab 3 hours.

Corequisite(s): METR 121B.

Grading: Credit/No Credit

METR 170C - Weather Briefing III

1 unit(s)

Weather analysis and forecasting lab. Simulated professional forecasts and briefings of the current state of the atmosphere at the large and local scales using real time forecast data.

Lab 3 hours.

Prerequisite(s): METR 170A, METR 170B, and METR 171A.

Corequisite(s): METR 172.

Grading: Credit/No Credit

Note(s): Preparation for WxChallenge.

METR 171A - Synoptic Weather Analysis and Forecasting

3 unit(s)

Structure and behavior of atmospheric circulation systems, practical weather analysis and forecasting techniques. Acquisition, manipulation and display of real-time data sets, verbal presentations of weather analyses and forecasts.

Misc/Lab: Lecture 1 hour/lab 6 hours each semester.

Prerequisite(s): METR 100W, METR 121B or instructor consent.

Pre/Corequisite(s): METR 125.

Grading: Letter Graded

Note(s): Year course.

METR 172 - Mesoscale Meteorology

3 unit(s)

Structure and behavior of mesoscale atmospheric circulations, practical weather forecasting techniques.

Prerequisite(s): METR 171A.

Grading: Letter Graded

METR 173 - Global Climate Modeling

3 unit(s)

Senior-level workshop-based course focused on climate modeling using general circulation model data.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): METR 51, METR 61, METR 100W, and METR 136.

Grading: Letter Graded

Sustainability Focused - SDG 13: Climate Action

METR 174 - Climate Change Capstone

3 unit(s)

Senior level capstone course in which students will define and conduct a project which is both climate change related and of a practical nature.

Prerequisite(s): METR 173 and METR 100W.

Grading: Letter Graded

Sustainability Focused - SDG 13: Climate Action

METR 179 - Topics in Senior Thesis

1-2 unit(s)

Supervised research and the preparation of a senior thesis.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): METR 100W. Not available to Open University Students.

Pre/Corequisite(s): METR 171A (first semester) METR 171B (second semester).

Grading: Credit/No Credit

METR 180 - Individual Studies

1-4 unit(s)

Independent work on topics by special arrangement. A maximum of four units may be repeated.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Meteorology major or minor. Not available to Open University Students.

Grading: Credit/No Credit

METR 182 - Tutor Assistant in Meteorology

1 unit(s)

Supervised instructional experience as a tutor assistant. A maximum of four units may be repeated.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Upper division standing and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

METR 185 - Special Topics

1-3 unit(s)

Selected topics in meteorology. Topics vary and are announced each semester.

Prerequisite(s): METR 121B.

Grading: Letter Graded

METR 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

METR 202 - Research Methods in Meteorology

3 unit(s)

The nature of research in meteorology with particular reference to formulation of the problem, methods of attack and presentation of results. Proposal writing and selection of MS thesis topic.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): Offered on an irregular basis only. This course satisfies graduate-level GWAR in this master's program.

METR 205 - Advanced Atmospheric and Climate Dynamics

3 unit(s)

Dynamics of larger-scale atmospheric flows over short and climate timescales. Quasi-geostrophic theory and applications; atmospheric waves; baroclinic instability; energetics of atmospheric and climate systems; dynamics of the general circulation; dynamics of the climate system; dynamics of climate change.

Prerequisite(s): METR 121B or equivalent

Grading: Letter Graded

Sustainability Related - SDG 13: Climate Action

METR 209 - Adv Fire Behavior

3 unit(s)

Advanced topics in meteorology of extreme fire behavior. Includes fire-atmosphere interactions, microscale turbulence, flame properties, combustion physics, fuel dynamics, and extreme fire behavior such as fire whirls. Offered every fourth year.

Prerequisite(s): METR 121A or instructor consent.

Grading: Letter Graded

METR 215 - Advanced Physical Meteorology

3 unit(s)

Thermodynamics of moist air; nucleation processes; particulates in air, microphysics and cloud dynamics, sampling techniques.

Prerequisite(s): METR 125 (or equivalent).

Grading: Letter Graded

METR 240 - Numerical Modeling

3 unit(s)

Numerical analysis and prediction in meteorology. Numerical methods and their errors; finite-difference and spectral methods; atmospheric models.

Prerequisite(s): METR 50 (or equivalent); METR 205A or instructor consent.

Grading: Letter Graded

METR 241 - Parameterization in NWP

3 unit(s)

Studies of parameterization schemes for sub-gridscale physics in numerical models. Included are schemes for surface fluxes, soil-vegetation models, convection, clouds, and radiative transfer. Why these are needed, and how they are developed and implemented.

Prerequisite(s): METR 240

Grading: Letter Graded

METR 280 - Recent Developments in Meteorology

1-3 unit(s)

Intensive study of a particular topic in the atmospheric sciences with special emphasis on recent research results, such as instrumentation or modeling techniques. Topics vary and are announced each semester.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

METR 285 - Colloquium

1 unit(s)

Advanced studies in special fields, including original work by faculty, guest speakers and graduate students. One presentation required of each enrolled student and attendance required for all graduate students.

Prerequisite(s): Instructor consent.

Grading: Mandatory Credit/No Credit/RP

METR 298 - Research

1-4 unit(s)

Supervised individual laboratory or field work.

Prerequisite(s): Instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

METR 298P - Master's Project

1-6 unit(s)

Repeatable for credit.

Prerequisite(s): Advancement to candidacy for the MS degree and approval of topic by thesis advisor. Not available to Open University Students.

Grading: Credit/No Credit/RP.

METR 299 - Master's Thesis

1-6 unit(s)
Repeatable for credit.

Prerequisite(s): Advancement to candidacy for the MS degree and approval of topic by thesis advisor. Not available to Open University Students.

Grading: Credit/No Credit/RP.

Microbiology

MICR 20 - General Bacteriology

5 unit(s)

Morphology, physiology, genetics and diversity of bacteria; their control by chemical and physical means; and their role in disease. For majors in allied health professions.

Misc/Lab: Lecture 4 hours/lab 3 hours.

Satisfies B2 + B3: Life Science & Lab.

Prerequisite(s): CHEM 1B, or CHEM 30A with a C or better or instructor consent.

Grading: Letter Graded

Note(s): Not an elective in the department majors.

MICR 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MICR 101 - General Microbiology

5 unit(s)

Fundamentals of basic microbiology emphasizing cell structure, cell metabolism, molecular genetics, microbial diversity and ecological relationships.

Lecture 3 hours/Lab 6 hours.

Prerequisite(s): BIOL 30 and BIOL 31 (with a grade of "C-" or better in each); CHEM 8 or CHEM 112A (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 122 - Bacterial Diversity

2 *unit(s)*

Study of the characteristics and microecology of unusual prokaryotes. Molecular and traditional approaches will be discussed.

Prerequisite(s): MICR 101 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 122. Biological Sciences is responsible for scheduling.

Sustainability Related

MICR 122L - Bacterial Diversity Laboratory

2 *unit(s)*

Laboratory techniques in bacterial diversity.

6 *hours Lab.*

Prerequisite(s): MICR 101 (with grade of "C" or better) or Instructor Consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 122L. Biological Sciences is responsible for scheduling.

MICR 123 - Food Microbiology

2 *unit(s)*

Detection and enumeration of both normal microbiological flora and spoilage organisms of specific foods. Control of sanitation problems in food production and processing.

Prerequisite(s): MICR 101 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 123L - Food Microbiology Laboratory

2 *unit(s)*

Practical microbiological techniques for the detection and enumeration of both normal microbiological flora and spoilage organisms of specific foods; and for the control of sanitation problems in food production and processing. Field trips to local food industries and/or a water treatment plant may be required within lab hours.

Lab 6 hours.

Prerequisite(s): MICR 101 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded.

MICR 127 - Microbial Physiology

3 unit(s)

Studies of the physiology of microbes specifically focusing on bacteria (growth, metabolism and regulation of gene expression); growth experiments and mutagenesis techniques. SJSU Studies Area: R for Biology Majors only.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): CHEM 135, MICR 166, both with a C or better, or instructor consent. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses.

Pre/Corequisite(s): BIOL 100W strongly recommended.

Grading: Letter Graded

Note(s): Biological Sciences Majors only.

MICR 127L - Microbial Physiology Laboratory

2 unit(s)

Laboratory experiments involve small and large-scale growth experiments (fermentation, continuous culture and batch culture), techniques used in mutagenesis and mutant characterization as well as construction and studies of reporter fusions.

Lab 6 hours.

Prerequisite(s): MICR 101 (with grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 140 - Hematology

3 unit(s)

Blood and blood forming organs. Theoretical and clinical aspects of normal and pathologic conditions of the erythrocytic, leukocytic, coagulation and blood group systems.

Course is repeatable for up to 3 units.

Prerequisite(s): MICR 101 (with grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 140L - Hematology Laboratory

2 unit(s)

Laboratory methodologies used to diagnose hematologic pathology. Prerequisite(s): MICR 101 (with grade of "C" or better), or instructor consent.

Lab 6 hours.

Pre/Corequisite(s): MICR 140. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 141 - Pathogenic Microbiology I

3 unit(s)

Concepts and principles of medical microbiology, emphasizing the biology of host-parasite interactions and mechanisms of infectious disease pathogenesis.

Prerequisite(s): MICR 101, BIOL 107 (with a grade of "C" or better in each); CHEM 112A or CHEM 8, (with a grade of "C" or better in each); or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 141L - Pathogenic Microbiology I Laboratory

3 unit(s)

Application of principles of medical microbiology to pathogen isolation, characterization and identification.

Lab 9 hours.

Prerequisite(s): MICR 101, BIOL 107, BIOL 107L (with a grade of "C" or better in each); CHEM 8 or CHEM 112A (with a grade of "C" or better in each), or instructor consent.

Corequisite(s): MICR 141. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 142 - Pathogenic Microbiology II

3 unit(s)

Concepts and principles of medical microbiology, emphasizing the biology of host-parasite interactions and mechanisms of infectious disease pathogenesis. Continuation of MICR 141.

Lecture 3 hours.

Prerequisite(s): MICR 141 (with grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 142L - Pathogenic Microbiology II Laboratory

3 unit(s)

Application of principles of medical microbiology to pathogen isolation, characterization and identification.

Lab 9 hours.

Prerequisite(s): MICR 141 and MICR 141L and BIOL 107L (with grades of "C" or better in each), or instructor consent.

Corequisite(s): MICR 142. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 166 - Bacterial Genetics

4 unit(s)

Fundamental prokaryotic genetic concepts and their incorporation into problem solving and experimental design. Emphasis on how and why someone might use genetic approaches to their benefit when addressing biological questions in bacteria.

Prerequisite(s): MICR 101 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

MICR 170 - General Virology

3 unit(s)

Molecular and biological aspects of animal, plant and microbial viruses and their relationships with their hosts, with primary emphasis on viruses that infect humans.

Prerequisite(s): MICR 101 with a grade of "C" or better, or instructor consent.

Grading: Letter Graded

MICR 180 - Individual Studies

1-4 unit(s)

Advanced lab work in special fields.

Repeatable for credit.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Credit/No Credit

MICR 184 - Directed Reading

1-4 unit(s)

Assigned readings of selected books, journals and papers to fill gaps in training or for contact with new fields. Evaluation through weekly reports and conferences.

Repeatable for credit.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Credit/No Credit

MICR 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MICR 291A - Advanced Hematology

4 unit(s)

Students will engage in advanced study of normal and abnormal hematologic conditions, including molecular diagnosis of disorders.

Grading: Credit/No Credit

MICR 291B - Advanced Pathophysiology

4 unit(s)

Students will engage in advanced study of normal and abnormal physiologic conditions, including but not limited to diseases of glucose metabolism, organ dysfunction, endocrine disorders and electrolyte balance.

Grading: Credit/No Credit

Note(s): Not an elective for Biology majors and not available to Open University students.

MICR 291C - Advanced Human Immunology

4 unit(s)

Students will engage in advanced study of normal and abnormal immunologic conditions in humans, including molecular diagnosis of those disorders.

Grading: Credit/No Credit

Note(s): Not an elective for Biology majors and not available to Open University students.

MICR 291D - Advanced Medical Microbiology

4 unit(s)

Students will engage in advanced study of bacteria, fungi, viruses and other organisms of significance in medical microbiology. Emphasis will be on experience through clinical practice.

Grading: Credit/No Credit

Note(s): Not an elective for Biology majors and not available to Open University students.

MICR 291E - Advanced Immunohematology

4 unit(s)

Students will engage in advanced study of immunohematology and the use of transfused products in medical treatment. Emphasis will be on experience through clinical practice.

Grading: Credit/No Credit

Note(s): Not an elective for Biology majors and not available to Open University students.

MICR 291F - Molecular Based Diagnostic Techniques

4 unit(s)

Students will engage in advanced study of application of molecular techniques for diagnostic purposes. Emphasis will be on advanced practical training.

Grading: Credit/No Credit

Note(s): Not an elective for Biology majors and not available to Open University students.

MICR 291G - Clinical Laboratory Management

4 unit(s)

Students will engage in advanced study of laboratory management skills, including finance, time management, team building, quality control, basic human resources management and other topics. Emphasis will be on practical training.

Grading: Credit/No Credit

Note(s): Not an elective for Biology majors and not available to Open University students.

MICR 292 - Topics and Demonstrations in Clinical Laboratory Science

3 unit(s)

Presentations and demonstrations of topics and selected clinical lab procedures.

Course may be repeated for credit for up to 36 units.

Prerequisite(s): Baccalaureate degree in a biological science, valid license as a CLS Trainee, admission into the CLS Traineeship, and instructor consent. Concurrent enrollment in MICR 291.

Grading: Letter Graded

MICR 293 - CGMBS Lab Management

3 unit(s)

Complements CGMBS Program students' experiences at their assigned clinical molecular laboratory training sites. Emphasis is on laboratory management, quality control and assurance, and safety.

Prerequisite(s): Acceptance into the SJSU CGMBS Training Program.

Grading: Letter graded.

Middle East Studies

MDES 90 - Bible History and Literature

3 unit(s)

The Bible in context of its history, literary sources and as a reflection of Jewish and Christian traditions. Motifs and themes in light of their original audience, historic usage and contemporary development.

Satisfies C2: Humanities.

Grading: Letter Graded

Cross-listed with HUM 90 / JWSS 90 / RELS 90. Humanities is responsible for scheduling.

MDES 144 - Middle Eastern Politics

4 unit(s)

Study of unfolding events in the Middle East. Themes include: the failure of democratic movements, nuclear proliferation and terrorism, US foreign policy towards the region, the Israel-Palestine conflict, urbanization, gender and human rights.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with JWSS 144 / POLS 144. Political Science is responsible for scheduling.

MDES 145 - Middle Eastern Traditions

3 unit(s)

Introduction to the peoples and cultures of the Middle East through exploration of the cooperation, competition, conflict and dialogues between the ethnic, national, and religious communities of contemporary Middle Eastern countries.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ANTH 145 / RELS 145. Humanities is responsible for scheduling.

MDES 156 - Islam, Politics and the West

3 unit(s)

An in-depth look at the roots of Islamic tradition, law, politics, culture, and society. Emphasis on Islam's growing global prominence; relations with the West; stereotypes and misconception, as well as the nature of the Islamic state.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded.

Cross-listed with RELS 156. Humanities is responsible for scheduling.

MDES 180 - Individual Studies

1-4 unit(s)

A project.

Prerequisite(s): Religious studies upper-division major or minor and coordinator consent.

Grading: Credit/No Credit

Cross-listed with RELS 180. Humanities is responsible for scheduling.

MDES 183A - Art of Egypt and Mesopotamia

3 unit(s)

The Arts of Egypt, Sumer, Akkad, Babylonia, Assyria, Anatolia, Hittites, and Persia (Elamite to Sassanian).

Prerequisite(s): ARTH 70A or instructor consent.

Grading: Letter Graded

Cross-listed with ARTH 183A. Art and Art History is responsible for scheduling.

MDES 184 - Directed Reading

1-4 unit(s)

Prerequisite(s): Religious studies upper-division major or minor and coordinator consent.

Grading: Credit/No Credit

Cross-listed with RELS 184. Humanities is responsible for scheduling.

MDES 189 - Feminist Perspectives on Gender and Religion

3 unit(s)

Contemporary feminist theories analyze premises of gender roles in religious cultures and variety of sexual expressions. Course will allow students understand the diversity of religious cultures and communities, in addition to how geographical, political, and social locations, like ethnicity and class affect the gender debate in religious perspectives.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with WGSS 189. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.
Sustainability Focused - SDG 5: Gender Equality

MDES 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Military Science

MILS 1A - Leadership & Personal Development

2 unit(s)

Introduction to the personal challenges and competencies that are critical for effective leadership. The focus is on developing basic knowledge and comprehension of Army leadership dimensions while gaining a big picture understanding of the ROTC program.

Grading: Letter Graded

MILS 1B - Introduction to Tactical Leadership

2 unit(s)

Overviews leadership fundamentals such as setting direction, problem-solving, listening, presenting briefs, providing feedback, and using effective writing skills. Students explore leadership attributes and core leader competencies in the context of practical, hands-on, and interactive exercises.

Grading: Letter Graded

MILS 2A - Innovative Team Leadership

2 unit(s)

Explores creative and innovative tactical leadership strategies and styles by examining team dynamics and trait and behavior theories. Students practice aspects of personal motivation and team building during planning, executing, and assessment of team exercises and participation in leadership labs.

Grading: Letter Graded

MILS 2B - Foundations of Tactical Leadership

2 unit(s)

Examines the challenges of leading tactical teams in today's complex world. The course highlights dimensions of terrain analysis, patrolling, and orders. Students develop greater awareness as they assess their own leadership styles and practice communication and team building skills.

Grading: Letter Graded

MILS 130A - Adaptive Team Leadership

4 unit(s)

Challenges students to study, practice, and evaluate adaptive leadership skills as they overcome challenging squad tactical operations scenarios. Cadets hone their leadership and critical thinking while they prepare for success at ROTC's summer Leadership Development and Assessment Course (LDAC).

Grading: Letter Graded

MILS 130B - Applied Team Leadership

4 unit(s)

Uses situational team leadership challenges to build awareness and skills in leading small units. Students review aspects of full spectrum operations, and conduct military briefings to develop proficiency giving operation orders. This is the final course before students attend LDAC.

Grading: Letter Graded

MILS 140A - Adaptive Leadership

4 unit(s)

Students learn how to train, mentor and evaluate underclassmen. They will learn the duties and responsibilities of an Army staff officer and apply those lessons during weekly training meetings to plan,

execute and assess battalion training events.

Grading: Letter Graded

MILS 140B - Leadership in a Complex World

4 unit(s)

Explores the realities of leading in the Contemporary Operating Environment (COE). Students learn to adapt to operations in unfamiliar lands and international terrorism. The course places significant emphasis on preparing cadets for their first assignment in the US Army.

Grading: Letter Graded

MILS 180 - Individual Studies

1-4 unit(s)

Individual work on special topics by arrangement.

Prerequisite(s): Instructor consent and Military Science Chair approval.

Grading: Credit/No Credit

MILS 199 - American Military History

3 unit(s)

A survey of diplomatic, international, military and economic aspects of American involvement in conflicts from the Anglo-Indian Wars to present time. Study of leadership, weapons technology, politics, humanitarian operations and critical thinking.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Music

MUSC 1A - Music Theory IA

2 unit(s)

First course in a four-semester core sequence of study of analytical systems of music. Topics include rhythm, melody, harmony, timbre, structure, style and contexts for performance and composition.

Prerequisite(s): Placement examination or completion of MUSC 9 with a grade of 'C' or better.

Grading: Letter Graded.

MUSC 1B - Musicianship IB

1 unit(s)

First course in a four-semester core sequence of aural skills acquisition, including dictation, sight-singing and analysis.

Prerequisite(s): Placement examination.

Grading: Letter Graded.

MUSC 2A - Music Theory IIA

2 unit(s)

A comprehensive introduction to the structural principles and compositional techniques of tonal music. Emphasis on diatonic harmony and elementary counterpoint through written exercises, model composition, and analysis..

Prerequisite(s): MUSC 1A or placement examination.

Grading: Letter Graded.

MUSC 2B - Musicianship IIB

1 unit(s)

Musicianship commensurate with MUSC 2A. Melodic, harmonic, and contrapuntal dictation, error detection, and aural perception of basic formal procedures.

Prerequisite(s): MUSC 1B or placement examination.

Grading: Letter Graded.

MUSC 3A - Music Theory IIIA

2 unit(s)

Continued study of the harmonic techniques and structural principles of tonal music, with emphasis on chromatic harmony and contrapuntal elaboration through written exercises, model composition, and analysis.

Prerequisite(s): MUSC 2A or placement examination.

Grading: Letter Graded.

MUSC 3B - Musicianship IIIB

1 unit(s)

Musicianship commensurate with MUSC 3A. Continued work in melodic, harmonic, contrapuntal dictation, and error detection of tonal music.

Prerequisite(s): MUSC 2B or placement examination.

Grading: Letter Graded.

MUSC 4A - Music Theory 4A

2 unit(s)

Continued study of the harmonic techniques and structural principles of tonal music, with emphasis on chromatic harmony and contrapuntal elaboration through written exercises, model composition, and analysis. An introduction to the structural principles and formal procedures of music from the early 20th century to the present.

Satisfies C1: Arts when taken as part of the Music Intensive Package.

Prerequisite(s): MUSC 3A or placement examination.

Grading: Letter Graded.

Note(s): Music Intensive Package also requires MUSC 4B and MUSC 12 .

MUSC 4B - Musicianship 4B

1 unit(s)

Musicianship commensurate with MUSC 4A. Continued work in melodic, harmonic, and contrapuntal dictation, error detection, and compositional trends from the 20th and 21st Century.

Satisfies C1: Arts when taken as part of the Music Intensive Package.

Prerequisite(s): MUSC 3B or placement examination.

Grading: Letter Graded.

Note(s): Music Intensive Package also requires MUSC 12 and MUSC 4A .

MUSC 6 - Jazz Theory

2 unit(s)

Understanding of traditional jazz nomenclature including chord symbols, chord/scale relationships, and jazz harmony. Various scales, their modes and their applications will be addressed as well as their applications to harmonic progressions common to the jazz idiom.

Prerequisite(s): MUSC 1A, MUSC 1B, MUSC 25A.

Grading: Letter Graded

MUSC 8 - The Artist's Way

3 unit(s)

Assists performing artists in becoming successful scholar/artists at SJSU and beyond through strategies for successful completion of studies at SJSU; experiencing and understanding the elements of the performing arts; and understanding and implementing lifelong practices for forging healthy performing arts careers.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

MUSC 9 - Music Fundamentals

3 unit(s)

Understanding music terminology, fundamental concepts in music theory and techniques in music reading. Acceptable as elective credit for music major (as review of fundamentals or for individual instruction in conjunction with applied music study) only with prior advisor approval.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Grading: Letter Graded

MUSC 10A - Music Appreciation

3 unit(s)

General survey of Western music focusing on recorded and live performances.

Satisfies C1: Arts.

Grading: Letter Graded

MUSC 10B - Introduction to Music

3 unit(s)

Beginning piano playing as a means to understanding music. Listening skills developed through exposure to a variety of music: Popular/classical, old/new, Western/non-Western.

Satisfies C1: Arts.

Grading: Letter Graded

MUSC 10BK - Class Piano for Non-Majors

1 unit(s)

Basic note reading and piano playing skills to develop foundational piano technique and musicianship for personal enrichment. Prior experience equivalent to one semester of college group piano class or piano lessons.

Activity 2 hours.

Prerequisite(s): MUSC 10B or permission of the instructor.

Grading: Letter Graded.

MUSC 10C - Pop and Rock in the U.S.

3 unit(s)

Examines the musical attributes, structures, and stylistic choices in American popular music, as well as the historical and cultural underpinnings of the originating forces and influences and how they affect or are affected by social/cultural norms and political and economic developments.

Satisfies C1: Arts.

Grading: Letter Graded

MUSC 10D - Introduction to Hip Hop

3 unit(s)

Examines the origins, development, and importance of the music and culture of Hip Hop with emphasis on its societal implications in the U.S. and worldwide.

Satisfies C1: Arts.

Grading: Letter Graded

MUSC 12 - Medieval and Renaissance Music

3 unit(s)

A brief introduction to the six major periods of music history (Ancient and Medieval, Renaissance, Baroque, Classical, Romantic and Modern) followed by a survey of the Ancient, Medieval, and Renaissance periods with a study of notation, theory, composers, works, and cultural history.

Satisfies C2: Humanities when taken as part of the Music Intensive Package.

Prerequisite(s): MUSC 2A or instructor consent.

Grading: Letter Graded

Note(s): Music Intensive Package also requires MUSC 4A and MUSC 4B

MUSC 13 - Music Technology

1 unit(s)

Hands-on skills development in music hardware and software, including music integration in word processing and graphics, music notation and Internet/WWW-based research tools for music majors or non-music majors with some music background.

Grading: Letter Graded

MUSC 19 - Music in World Cultures

3 unit(s)

Introduction to music in various cultural contexts outside European classical tradition. Live performances, film, video tapes and slides. Projects involving related arts are encouraged.

Satisfies C1: Arts.

Grading: Letter Graded

Cross-listed with ASIA 19. Music is responsible for scheduling.

MUSC 25A - Piano Proficiency I

1 unit(s)

Skills development in performing four-part harmony; harmonizing melodies in pianistic style, modulation, simple score reading and sight-reading. First in three-course sequence to prepare applied music students for piano proficiency exam at the end of MUSC 25C.

Misc/Lab: Activity 2 hours.

Prerequisite(s): MUSC 9 (or equivalent) or instructor consent.

Grading: Letter Graded

MUSC 25B - Piano Proficiency II

1 unit(s)

25B continuation of 25A.

Prerequisite(s): MUSC 25A or equivalent, instructor consent

Grading: Letter Graded

MUSC 25C - Piano Proficiency III

1 unit(s)

Preparation for Piano Proficiency Exam

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 9, MUSC 25B or equivalent, instructor consent

Grading: Letter Graded

MUSC 26A - Voice Fundamentals

1 unit(s)

Principles of voice production and performance.

Prerequisite(s): MUSC 9 or MUSC 10B (or equivalent).

Grading: Letter Graded

MUSC 27A - Fundamentals of Jazz Keyboard I

1 unit(s)

For any instrumental/voice student. Basic skills in jazz keyboard: Chord voicings, symbols, progressions and rhythmic patterns, jazz styles, simple melodic techniques and accompaniment.

Grading: Letter Graded

MUSC 27B - Fundamentals of Jazz Keyboard II

1 unit(s)

Advanced applications of materials presented in MUSC 27A, including keyboard performance of selected lead-sheet literature; chord symbol recognition, keyboard techniques, chord substitutions introduced, polychords.

Prerequisite(s): MUSC 27A (or equivalent).

Grading: Letter Graded

MUSC 28 - Guitar Fundamentals

1 unit(s)

The purpose of this course is to develop basic skills and techniques in guitar playing, applicable to various types of music and teaching.

Grading: Letter Graded.

MUSC 29 - Electro-Acoustics

1-2 unit(s)

Incorporating current music technology and instrumentation in creating works and projects. Required each semester of lower division electro-acoustic majors.

Prerequisite(s): Audition or Instructor Consent

Grading: Letter Graded

MUSC 29A - Electro-Acoustics 1

1-2 unit(s)

APPLIED LESSONS: Electro-acoustics level 1, incorporating current music technology and instrumentation into projects. For music technology majors.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 29AX - Applied Electro-Acoustic 1

1 unit(s)

The course is an intensive study of electro-acoustic music and audio production methods. Works and projects are created incorporating current music technology and instrumentation.

Prerequisite(s): Successful audition into the applied area

Grading: Letter Graded

MUSC 29B - Electro-Acoustics 2

1-2 unit(s)

APPLIED LESSONS: Electro-acoustics level 2, incorporating current music technology and instrumentation into projects. For music technology majors.

Prerequisite(s): Audition and instructor consent, MUSC 29A or equivalent

Grading: Letter Graded

MUSC 29BX - Applied Electro-Acoustic 2

1 unit(s)

The course is an intensive study of electro-acoustic music and audio production methods. Works and projects are created incorporating current music technology and instrumentation.

Prerequisite(s): Successful audition into the applied area

Grading: Letter Graded

MUSC 29C - Electro-Acoustics 3

1-2 unit(s)

APPLIED LESSONS: Electro-acoustics level 3, incorporating current music technology and instrumentation into projects. For music technology majors.

Prerequisite(s): Audition and instructor consent, MUSC 29B or equivalent

Grading: Letter Graded

MUSC 29CX - Applied Electro-Acoustic 3

1 unit(s)

The course is an intensive study of electro-acoustic music and audio production methods. Works and projects are created incorporating current music technology and instrumentation.

Prerequisite(s): Successful audition into the applied area

Grading: Letter Graded

MUSC 29D - Electro-Acoustics 4

1-2 unit(s)

APPLIED LESSONS: Electro-acoustics level 4, incorporating current music technology and instrumentation into projects. For music technology majors.

Prerequisite(s): Audition and instructor consent, MUSC 29C or equivalent

Grading: Letter Graded

MUSC 29DX - Applied Electro-Acoustic 4

1 unit(s)

The course is an intensive study of electro-acoustic music and audio production methods. Works and projects are created incorporating current music technology and instrumentation.

Prerequisite(s): Successful audition into the applied area

Grading: Letter Graded

MUSC 30 - Piano

1-2 unit(s)

Required each semester of lower division piano majors.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 30A - Piano 1

1-2 unit(s)

APPLIED LESSONS: Piano level 1. Required of BM piano majors every semester.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 30AX - Applied Piano 1

1 unit(s)

The objective of applied lessons is for the instructor to work intensively with the individual piano major in acquiring skills both technical and interpretive in the mastery of standard repertory.

Prerequisite(s): Successful audition into applied area

Grading: Letter Graded

MUSC 30B - Piano 2

1-2 unit(s)

APPLIED LESSONS: Piano level 2. Lessons required of BM piano majors every semester.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 30BX - Applied Piano 2

1 unit(s)

The objective of applied lessons is for the instructor to work intensively with the individual piano major in acquiring skills both technical and interpretive in the mastery of standard repertory.

Prerequisite(s): Successful audition into applied area

Grading: Letter Graded

MUSC 30C - Piano 3

1-2 unit(s)

APPLIED LESSONS: Piano level 3. Lessons required of BM piano majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 30B or equivalent.

Grading: Letter Graded

MUSC 30CX - Applied Piano 3

1 unit(s)

The objective of applied lessons is for the instructor to work intensively with the individual piano major in acquiring skills both technical and interpretive in the mastery of standard repertory.

Prerequisite(s): Successful audition into applied area

Grading: Letter Graded

MUSC 30D - Piano 4

1-2 unit(s)

APPLIED LESSONS: Piano level 4. Lessons required of BM piano majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 30C or equivalent.

Grading: Letter Graded

MUSC 30DX - Applied Piano 3

1 unit(s)

The objective of applied lessons is for the instructor to work intensively with the individual piano major in acquiring skills both technical and interpretive in the mastery of standard repertory.

Prerequisite(s): Successful audition into applied area

Grading: Letter Graded

MUSC 33 - Voice

1-2 unit(s)

Required each semester of lower division voice majors. Study and development of vocal techniques and performance of representative repertoire from principal periods in music. Includes compositions embracing the English, Italian, French and German languages.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 33A - Voice 1

1-2 unit(s)

APPLIED LESSONS: Voice level 1. Required of BM vocal majors every semester.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 33AX - Applied Voice 1

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division Voice majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 33B - Voice 2

1-2 unit(s)

APPLIED LESSONS: Voice level 2. Required of BM vocal majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 33A or equivalent.

Grading: Letter Graded

MUSC 33BX - Applied Voice 2

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division Voice majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 33C - Voice 3

1-2 unit(s)

APPLIED LESSONS: Voice level 3. Required of BM vocal majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 33B or equivalent.

Grading: Letter Graded

MUSC 33CX - Applied Voice 3

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division Voice majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 33D - Voice 4

1-2 unit(s)

APPLIED LESSONS: Voice level 4. Required of BM vocal majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 33C or equivalent.

Grading: Letter Graded

MUSC 33DX - Applied Voice 4

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division Voice majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 33X - Applied Voice

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division Voice majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 34 - Strings

1-2 unit(s)

Required each semester of lower division string majors.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 34A - Strings 1

1-2 unit(s)

APPLIED LESSONS: Strings level 1. Required of BM string majors every semester.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 34AX - Strings 1

1 unit(s)

Applied lessons A-D, required each semester of upper and lower division string majors.

Prerequisite(s): Audition or instructor consent

Grading: Letter Graded

MUSC 34B - Strings 2

1-2 unit(s)

APPLIED LESSONS: Strings level 2. Required of BM string majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 34A or equivalent

Grading: Letter Graded

MUSC 34BX - Strings 2

1 unit(s)

Applied lessons A-D, required each semester of upper and lower division string majors.

Prerequisite(s): Audition or instructor consent

Grading: Letter Graded

MUSC 34C - Strings 3

1-2 unit(s)

APPLIED LESSONS: Strings level 3. Required of BM string majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 34B or equivalent

Grading: Letter Graded

MUSC 34CX - Strings 3

1 unit(s)

Applied lessons A-D, required each semester of upper and lower division string majors.

Prerequisite(s): Audition or instructor consent

Grading: Letter Graded

MUSC 34D - Strings 4

1-2 unit(s)

APPLIED LESSONS: Strings level 4. Required of BM string majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 34C or equivalent

Grading: Letter Graded

MUSC 34DX - Strings 4

1 unit(s)

Applied lessons A-D, required each semester of upper and lower division string majors.

Prerequisite(s): Audition or instructor consent

Grading: Letter Graded

MUSC 34X - Strings

1 unit(s)

Applied lessons A-D, required each semester of upper and lower division string majors.

Prerequisite(s): Audition or instructor consent

Grading: Letter Graded

MUSC 35 - Woodwinds

1-2 unit(s)

Required each semester of lower division woodwind majors.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 35A - Woodwinds 1

1-2 unit(s)

APPLIED LESSONS: Woodwinds level 1. Required of BM woodwind majors every semester. Flute, oboe, bassoon, clarinet or saxophone.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 35AX - Woodwinds 1

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division woodwind majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 35B - Woodwinds 2

1-2 unit(s)

APPLIED LESSONS: Woodwinds level 2. Required of BM woodwind majors every semester. Flute, oboe, bassoon, clarinet or saxophone.

Prerequisite(s): Audition and instructor consent, MUSC 35A or equivalent

Grading: Letter Graded

MUSC 35BX - Woodwinds 2

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division woodwind majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 35C - Woodwinds 3

1-2 unit(s)

APPLIED LESSONS: Woodwinds level 3. Required of BM woodwind majors every semester. Flute, oboe, clarinet, bassoon or saxophone.

Prerequisite(s): Audition and instructor consent, MUSC 35B or equivalent

Grading: Letter Graded

MUSC 35CX - Woodwinds 3

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division woodwind majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 35D - Woodwinds 4

1-2 unit(s)

APPLIED LESSONS: Woodwinds level 4. Required of BM woodwind majors every semester. Flute, oboe, bassoon, clarinet or saxophone.

Repeatable for credit with instructor consent.

Prerequisite(s): Audition and instructor consent, MUSC 35C or equivalent

Grading: Letter Graded

MUSC 35DX - Woodwinds 4

1 unit(s)

Applied Lessons 1-8, required each semester for lower and upper division woodwind majors.

Prerequisite(s): Audition and/or the prior course in the sequence

Grading: Letter Graded

MUSC 36 - Brass

1-2 unit(s)

Required each semester of lower division brass majors.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 36B - Brass 1

1-2 unit(s)

APPLIED LESSONS: Brass level 1. Required of BM brass majors every semester. Trumpet, trombone, french horn, euphonium, tuba.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 36BX - Brass 1

1 unit(s)

Required each semester for lower and upper division brass majors.

Prerequisite(s): Successful audition into the applied area.

Grading: Letter Graded

MUSC 36C - Brass 2

1-2 unit(s)

APPLIED LESSONS: Brass level 2. Required of BM brass majors every semester. Trumpet, trombone, french horn, euphonium, tuba.

Prerequisite(s): Audition and instructor consent, MUSC 36B or equivalent

Grading: Letter Graded

MUSC 36CX - Brass 2

1 unit(s)

Required each semester for lower and upper division brass majors.

Prerequisite(s): Successful audition into the applied area.

Grading: Letter Graded

MUSC 36D - Brass 3

1-2 unit(s)

APPLIED LESSONS: Brass level 3. Required of BM brass majors every semester. Trumpet, trombone, french horn, euphonium, tuba.

Prerequisite(s): Audition and instructor consent, MUSC 36C or equivalent

Grading: Letter Graded

MUSC 36DX - Brass 3

1 unit(s)

Required each semester for lower and upper division brass majors.

Prerequisite(s): Successful audition into the applied area.

Grading: Letter Graded

MUSC 36E - Brass 4

1-2 unit(s)

APPLIED LESSONS: Brass level 4. Required of BM brass majors every semester. Trumpet, trombone, french horn, euphonium, tuba.

Prerequisite(s): Audition and instructor consent, MUSC 36D or equivalent

Grading: Letter Graded

MUSC 36EX - Brass 4

1 unit(s)

Required each semester for lower and upper division brass majors.

Prerequisite(s): Successful audition into the applied area.

Grading: Letter Graded

MUSC 37 - Percussion

1-2 unit(s)

Required each semester of lower division percussion majors.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 37A - Percussion 1

1-2 unit(s)

APPLIED LESSONS: Percussion level 1. Required of BM percussion majors every semester.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 37AX - Applied Percussion 1

1 unit(s)

Applied Lessons - Instruction in technical, stylistic, and aesthetic elements of artistic performance in percussion.

Prerequisite(s): Successful audition into the percussion studio

Grading: Letter Graded

MUSC 37B - Percussion 2

1-2 unit(s)

APPLIED LESSONS: Percussion level 2. Required of BM percussion majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 37A or equivalent.

Grading: Letter Graded

MUSC 37BX - Applied Percussion 2

1 unit(s)

Applied Lessons - Instruction in technical, stylistic, and aesthetic elements of artistic performance in percussion.

Prerequisite(s): Successful audition into the percussion studio

Grading: Letter Graded

MUSC 37C - Percussion 3

1-2 unit(s)

APPLIED LESSONS: Percussion level 3. Required of BM percussion majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 37B or equivalent.

Grading: Letter Graded

MUSC 37CX - Applied Percussion 3

1 unit(s)

Applied Lessons - Instruction in technical, stylistic, and aesthetic elements of artistic performance in percussion.

Prerequisite(s): Successful audition into the percussion studio

Grading: Letter Graded

MUSC 37D - Percussion 4

1-2 unit(s)

APPLIED LESSONS: Percussion level 4. Required of BM percussion majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 37C or equivalent.

Grading: Letter Graded

MUSC 37DX - Applied Percussion 4

1 unit(s)

Applied Lessons - Instruction in technical, stylistic, and aesthetic elements of artistic performance in percussion.

Prerequisite(s): Successful audition into the percussion studio

Grading: Letter Graded

MUSC 38B - Composition 1

1-2 unit(s)

APPLIED LESSONS: Composition level 1. Required of BM composition majors every semester.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 38BX - Applied Instruction in Music Composition 1

1 unit(s)

The course is an intensive study of the materials of art music composition. Works are created incorporating common practice and twentieth century procedures

Grading: Letter Graded

MUSC 38C - Composition 2

1-2 unit(s)

APPLIED LESSONS: Composition level 2. Required of BM composition majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 1A, MUSC 1B, MUSC 38B, with a B or better

Corequisite(s): MUSC 2A and MUSC 2B

Grading: Letter Graded

MUSC 38CX - Applied Instruction in Music Composition 2

1 unit(s)

The course is an intensive study of the materials of art music composition. Works are created incorporating common practice and twentieth century procedures

Grading: Letter Graded

MUSC 38D - Composition 3

1-2 unit(s)

APPLIED LESSONS: Composition level 3. Required of BM composition majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 2A and MUSC 2B, MUSC 38C, with a B or better

Corequisite(s): MUSC 3A and MUSC 3B

Grading: Letter Graded

MUSC 38DX - Applied Instruction in Music Composition 3

1 unit(s)

The course is an intensive study of the materials of art music composition. Works are created incorporating common practice and twentieth century procedures

Grading: Letter Graded

MUSC 38E - Composition 4

1-2 unit(s)

APPLIED LESSONS: Composition level 4. Required of BM composition majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 3A and MUSC 3B, MUSC 38D, with a B or better

Corequisite(s): MUSC 4A and MUSC 4B

Grading: Letter Graded

MUSC 38EX - Applied Instruction in Music Composition 4

1 unit(s)

The course is an intensive study of the materials of art music composition. Works are created incorporating common practice and twentieth century procedures

Grading: Letter Graded

MUSC 39A - Jazz: Improvisation, Composition or Arranging 1

1-2 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 1. Required of BM Jazz Studies majors every semester.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 39AX - Jazz: Improvisation, Composition or Arranging 1

1 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 1. Required of BA, BM-Composition, or BM Jazz Studies majors every semester.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 39B - Jazz: Improvisation, Composition or Arranging 2

1-2 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 2. Required of BM Jazz Studies majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 39A or equivalent

Grading: Letter Graded

MUSC 39BX - Jazz: Improvisation, Composition or Arranging 2

1 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 2. Required of BA, BM-Composition, or BM Jazz Studies majors every semester.

Prerequisite(s): MUSC 39AX or equivalent

Grading: Letter Graded

MUSC 39C - Jazz: Improvisation, Composition or Arranging 3

1-2 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 3. Required of BM Jazz Studies majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 39B or equivalent

Grading: Letter Graded

MUSC 39CX - Jazz: Improvisation, Composition or Arranging 3

1 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 3. Required of BA, BM-Composition, or BM Jazz Studies majors every semester.

Prerequisite(s): MUSC 39BX or equivalent

Grading: Letter Graded

MUSC 39D - Jazz: Improvisation, Composition and Arranging 4

1-2 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 5. Required of BM Jazz Studies majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 39C or equivalent

Grading: Letter Graded

MUSC 39DX - Jazz: Improvisation, Composition or Arranging 4

1 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 4. Required of BA, BM-Composition, or BM Jazz Studies majors every semester.

Prerequisite(s): MUSC 39CX or equivalent

Grading: Letter Graded

MUSC 39X - Applied Jazz Saxophone

1 unit(s)

The goal of Applied Jazz Saxophone at any level is to present each student with the appropriate materials to increase his/her ability as an improvising musician. Emphasis will be placed on learning standard jazz repertoire; the transcription of jazz solos; the assimilation of technical patterns associated with improvisation; and internalizing an idiomatic stylistic approach.

Prerequisite(s): MUSC 39AxBxCxDx: Successful audition into the BA Music Degree MUSC 39ABCD: Successful audition into the BM Jazz Studies Degree MUSC 139ABCD: Successful completion of Junior Qualifying Examination MUSC 224: Successful audition into the MM Jazz Studies Degree MUSC 239: With graduate advisors and applied instructors consent

Grading: Letter Graded

MUSC 40A - Jazz Improvisation - I

2 unit(s)

Development of performance skills for lead-sheet interpretation: response and interplay, ear-training for improvisers, basic chord-scales and jazz vocabulary. Vocal, instrumental, and transcription exercises. In-class performance. Emphasis will be placed on blues, modal compositions, and simple song forms.

Misc/Lab: Seminar 1 hour/activity 2 hours.

Pre/Corequisite(s): MUSC 1A, MUSC 1B and MUSC 25A; or equivalent.

Grading: Letter Graded

MUSC 41A - Applied Lyric Diction

1 unit(s)

Pronunciation and applied execution of correct diction in English and Italian for singers in a master class setting. Performance of specific literature of these languages with emphasis on correct usage of the International Phonetic alphabet for lyric diction.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 41B - Applied Lyric Diction

1 unit(s)

Pronunciation and applied execution of correct diction in French and German for singers in a master class setting. Performance of specific literature of these languages with emphasis on correct usage of the International Phonetic Alphabet for lyric diction.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 50A - ENS: Concert Choir

1 unit(s)

Ensemble. Large select choral ensemble, specializing in advanced a cappella and symphonic major works from all periods.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 51 - ENS: University Chorales

1 unit(s)

ENS: Rehearsal and performance of choral masterpieces and music with wide popular appeal. Students involved in the University Chorales will participate in either the SJSU Women's Chorus, Men's Glee Club, or other specialized choral ensemble and will have the opportunity to study and perform high quality choral literature.

Course may be repeated for credit for up to 5 units.

Grading: Letter Graded

Note(s): Elective course open to music majors and non-music majors.

MUSC 51A - ENS: University Chorales - Treble Choir

1 unit(s)

Vocal ensemble for treble voices. Bi-weekly rehearsals lead to one or more performances per semester.

Activity 2 hours.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition or Instructor Consent

Grading: Letter Graded

MUSC 51B - ENS: University Chorales - Spartan Glee

1 unit(s)

Vocal ensemble for low voices. Bi-weekly rehearsals lead to one or more performances per semester.

Activity 2 hours.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition or Instructor Consent

Grading: Letter Graded

MUSC 52 - ENS: Opera Theater

1 unit(s)

Ens: Training and performance experience in the field of opera. Fully-staged productions of one-act and conventional length works of varying styles.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent.

Grading: Letter Graded

MUSC 53 - ENS: University Symphony Orchestra

1 unit(s)

Ens: Rehearsal and performance of standard orchestral and operatic repertory.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 54 - ENS: Symphonic Band

1 unit(s)

ENS: Rehearsal and performance of large symphonic band repertory.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 55 - ENS: Wind Ensemble

1 unit(s)

ENS: Major performing group open to all wind instrumentalists by audition. Select group that performs the most advanced and high quality contemporary and traditional literature for wind ensemble from all periods. Programming changes every semester. Performances can include but not be limited to state and national conferences.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 56 - ENS: Spartan Marching Band

1 unit(s)

ENS: Open by permission to all students who play saxophone, brass or percussion instruments. Performs at all home and selected away Spartan football games.

Activity 2 hours.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 57 - ENS: Jazz Orchestra

1 unit(s)

ENS: Big band jazz performance for instrumentalists and singers. Classic and new repertoire. Concert performances.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 59 - ENS: Afro-Latin Jazz Ensemble

1 unit(s)

ENS: Performance of Afro-Latin jazz and popular music repertoires of the US, the Caribbean, and Latin

America. Ensemble techniques and solo improvisation. Concert performances.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 60A - ENS: Choraliers

1 unit(s)

ENS: Small select chamber vocal group specializing in music from all periods, Renaissance to Contemporary.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 60C - ENS: Chamber Music

1 unit(s)

ENS: In-depth chamber music study and performance of standard repertoire with two or more instruments plus piano.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 60D - ENS: Collegium Musicum

1 unit(s)

ENS: Reinforces music history studies through performance. Authenticating performance of pre-Classical music on period instruments and accurate vocal/instrumental practices. Vocal and instrumental, sacred and secular music performed.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 60E - ENS: Jazz Singers

1 unit(s)

ENS: Performance of advanced literature for chamber jazz chorus in concerts, festivals, and special events. Performance techniques, improvisation, musicianship and studio-recording techniques.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 60F - ENS: Small Jazz Ensembles

1 unit(s)

ENS: Small-group jazz performance: standard literature, informal ("head") arrangements. In-class and/or public performances.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 1A, MUSC 1B, MUSC 40A and MUSC 140B or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 60G - ENS: Pep Band

1 unit(s)

ENS: Limited to twenty-five woodwind, brass and percussion players; performs at home Spartan basketball games and certain campus functions.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 60H - ENS: Percussion Ensemble

1 unit(s)

ENS: Performing class consisting of percussion majors. Master classes during fall semester.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Non-majors by audition and instructor consent

Grading: Letter Graded

MUSC 60I - ENS: Jazz Ensemble

1 unit(s)

ENS: Large jazz ensemble focused on learning standard repertoire, style, pedagogy and improvisation.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 60J - ENS: String Ensemble

1 unit(s)

ENS: Chamber works for various string combinations studied and performed. Rehearsal and performance techniques for small chamber groups.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 60K - ENS: Brass Ensemble

1 unit(s)

ENS: Performance of duet, trio, quartet and quintet literature for mixed and homogeneous brass instruments. Literature used represents all style periods with either original or transcription materials.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 60L - ENS: Woodwind Ensemble

1 unit(s)

ENS: Chamber works for various woodwind combinations. Rehearsal and performance techniques for small chamber groups.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition or Instructor Consent

Grading: Letter Graded

MUSC 60M - ENS: Saxophone Ensemble

1 unit(s)

ENS: Overview of music for saxophone ensemble for two to twenty players. All styles studied from Renaissance to Jazz.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 60O - ENS: Trombone Ensemble

1 unit(s)

ENS: Rehearsal and performance of literature for trombone ensemble. Weekly meetings will also include discussion of brass related topics.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 60S - ModLark - Mobile Device and Laptop Orchestra (Intro. Level)

1 unit(s)

Music performing ensemble of laptops and mobile communication devices presenting original sonic

compositions. Overview of computer music performance, introductory level digital instrument design, and collaborative performance practices.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded.

MUSC 61 - REP: Styles and Interpretation of Opera I

1 unit(s)

REP: Introduction to styles of opera composition and presentation focusing on opera scenes being presented by the Opera Theater.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 63 - REP: Styles and Interpretation of Opera II

1 unit(s)

REP: Advanced styles of opera composition and presentation focusing on opera scenes being presented by the Opera Theater

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and Instructor Consent

Grading: Letter Graded

MUSC 64 - New Music Ensemble

1 unit(s)

The New Music Ensemble performs solo, chamber, and large ensemble works drawn from the broad spectrum of contemporary music, including works by living composers.

Activity 2 hours.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent.

Grading: Letter Graded

MUSC 65 - Concert Band

1 unit(s)

Concert Band is an ensemble open to all wind and percussion instrumentalists regardless of major. It is designed for instrumentalists that are still developing rehearsal and performance skills in an ensemble setting that culminates in a concert on campus each semester.

Activity 2 hours.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Open to freshmen and sophomores only.

Grading: Letter Graded

MUSC 66A - Mariachi San José

1 unit(s)

Mariachi San José is an advanced-level university ensemble performing repertoire predominantly from Mexico's *música ranchera* genre. The ensemble maintains an active schedule performing throughout the semester for university and community events. Participation in the ensemble requires audition and students are expected to be proficient in mariachi performance practice, as both vocalist and as an instrumentalist on one of the following instruments: violin, trumpet, guitar, *viuela*, *guitarrón*, and/or *arpa folklórico*.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent.

Grading: Letter Graded.

MUSC 81 - Concert Listening I

1 unit(s)

Active involvement in the professional musical life of the campus and community through attending programs from the master list published each semester and writing five critical reviews.

Course may be repeated for credit for up to 4 units.

Grading: Credit/No Credit

Note(s): Open to all university students.

MUSC 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MUSC 100W - Written Communication II

3 unit(s)

Examines the process of critique, creative description, research, and professional communications central to the performing arts. Students develop writing skills through the study of varied formats focused on the arts.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.
Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

MUSC 102 - Orchestration

3 unit(s)

Ranges, sonorities, transposition and technical considerations of orchestral instruments. Performance of project for full orchestra as culminating activity.

Prerequisite(s): MUSC 13, MUSC 4A and MUSC 4B or equivalents
Grading: Letter Graded

Note(s): May be taken singly or in any sequence.

MUSC 103 - Form and Analysis

3 unit(s)

Formal design and pitch structure of Western art music.

Prerequisite(s): MUSC 4A and MUSC 4B.
Grading: Letter Graded

MUSC 104 - Counterpoint

3 unit(s)

The study of the art of counterpoint from the sixteenth century to the present. Includes analysis, imitative and original composition.

Prerequisite(s): MUSC 4A and MUSC 4B (both with C or better); placement examination.
Grading: Letter Graded

Note(s): May be taken singly or in any sequence. Emphasis may vary.

MUSC 106A - Jazz Arranging I

2 unit(s)

First in a two -semester sequence of jazz arranging and composition required of all jazz majors. Deals primarily with techniques involved in writing and arranging music for the small jazz ensemble and addresses skills used jazz composition.

Prerequisite(s): MUSC 2A, MUSC 2B, MUSC 6, MUSC 40A.
Grading: Letter Graded

MUSC 106B - Jazz Arranging II

2 unit(s)

Second in a two-semester sequence of jazz arranging and composition required of all jazz majors. Deals

primarily with techniques involved in writing and arranging music for the large jazz ensemble. Computer notation is required on all finished projects.

Prerequisite(s): MUSC 2A, MUSC 2B, MUSC 6, MUSC 106A.

Grading: Letter Graded

MUSC 109 - Film Scoring Techniques

3 unit(s)

Production-oriented introduction to techniques of applied composition and sound for film, television, video and related visual media. Concepts of style and orchestration.

Prerequisite(s): Lower division music theory (MUSC 4A and MUSC 4B) or consent of instructor.

Grading: Letter Graded

Note(s): Emphasis may vary.

MUSC 110 - Baroque and Classical Music History

3 unit(s)

Exploration and survey of the Baroque and Classical periods with study of styles, composers, works, music theory, performance practices, and cultural and intellectual history. Application of research and library skills through research assignments.

Prerequisite(s): MUSC 12, MUSC 3A (or equivalent), or instructor consent.

Grading: Letter Graded

MUSC 111 - Romantic and Modern Music History

3 unit(s)

Exploration and survey of Romantic and Modern classical music with study of styles, composers, works, music theory, performance practices, and cultural and intellectual history. Demonstration of research and library skills through a term paper.

Prerequisite(s): MUSC 110, or equivalent.

Grading: Letter Graded

MUSC 117 - Music and Culture in Latin America

3 unit(s)

Traces development of musical traditions in Latin America. Analyzes formation of musical styles resulting from socio-political, cultural and economic processes.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

MUSC 120 - Worlds of Jazz

3 unit(s)

Course approaches jazz as part of American and global cultural history, exploring the changing social contexts in which jazz musicians in the US and abroad have worked and lived throughout the 20th century and today.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

MUSC 122A - Fundamental Techniques of Woodwinds: Flute, Clarinet, and Saxophone

1 unit(s)

Woodwinds: Flute, Clarinet, and Saxophone. Required for credential. Instrumental emphasis in music education must take two units including clarinet, saxophone, flute, oboe, and bassoon. Choral/general emphasis must take a minimum of one unit to include flute, clarinet and saxophone.

Activity 2 hours.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

MUSC 122B - Fundamental Techniques and Literature: Instrumental

1 unit(s)

Woodwinds: double reeds and saxophone. Required for credential. Instrumental emphasis in music education must take two units including flute, clarinet, saxophone and double reeds. Choral/general emphasis must take a minimum of one unit including flute, clarinet, and saxophone.

Activity 2 hours.

Prerequisite(s): Upper division standing and instructor consent.

Grading: Letter Graded

MUSC 123A - Brass Fundamentals: Upper Brass

1 unit(s)

Upper Brass. Required for credential. Instrumental emphasis in music education must take two units including upper and lower brass. Choral/general emphasis must take a minimum of one unit of brass.

Activity 2 hours.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

MUSC 123B - Brass Fundamentals: Low Brass

1 unit(s)

Lower Brass. Required for credential. Instrumental emphasis in music education must take two units

including upper and lower brass. Choral/general emphasis must take a minimum of one unit of upper brass.

Activity 2 hours.

Prerequisite(s): Upper Division Standing and Instructor Consent

Grading: Letter Graded

MUSC 124 - Special Topics in Music History/Literature

1-3 unit(s)

Content varies to allow presentation of one-time courses by specialists from artist-faculty and guests.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

MUSC 125D - Percussion Techniques

1 unit(s)

Percussion. Required for credential.

Activity 2 hours.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

MUSC 126 - Marching Band Techniques

1 unit(s)

Methods and materials of marching band instruction. Techniques of show development, arranging, drill design, charting, and drill instruction. Principles of band administration, such as budget management, purchasing, and program development. Required for credential.

Prerequisite(s): Upper division standing and instructor consent.

Grading: Letter Graded

Note(s): Offer through Extended Studies.

MUSC 127A - Fundamental Techniques and Literature: Instrumental Upper Strings - Violin and Viola

1 unit(s)

Upper Strings. Required for credential. Instrumental emphasis in music education must take two units including upper and lower strings. Choral/general emphasis must take a minimum of one unit of strings.

Activity 2 hours.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

MUSC 127B - Fundamental Techniques and Literature: Instrumental Lower Strings - Cello and Bass

1 unit(s)

Lower Strings. Required for credential. Instrumental emphasis in music education must take two units including upper and lower strings. Choral/general emphasis must take a minimum of one unit of upper strings.

Activity 2 hours.

Prerequisite(s): Upper division standing and instructor consent.

Grading: Letter Graded

MUSC 129A - Electro-Acoustics 5

1-2 unit(s)

APPLIED LESSONS: Electro-acoustics level 5, incorporating current music technology and instrumentation into projects. For music technology majors.

Prerequisite(s): Audition and instructor consent, MUSC 29D or equivalent

Grading: Letter Graded

MUSC 130A - Piano 5

1-2 unit(s)

APPLIED LESSONS: Piano level 5. Lessons required of BM piano majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 30D or equivalent.

Grading: Letter Graded

MUSC 130B - Piano 6

1-2 unit(s)

APPLIED LESSONS: Piano level 6. Lessons required of BM piano majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 130A or equivalent.

Grading: Letter Graded

MUSC 130C - Piano 7

1-2 unit(s)

APPLIED LESSONS: Piano level 7. Lessons required of BM piano majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 130B or equivalent.

Grading: Letter Graded

MUSC 130D - Piano 8

1-2 unit(s)

APPLIED LESSONS: Piano level 8. Lessons required of BM piano majors every semester.

Prerequisite(s): Audition and instructor consent, MUSC 130C or equivalent.
Grading: Letter Graded

MUSC 133 - Voice

1-2 unit(s)

Required each semester of upper division voice majors. Continuation of MUSC 33. Study of more advanced repertoire and techniques.

Prerequisite(s): Audition or instructor consent.
Grading: Letter Graded

MUSC 133A - Voice 5

1-2 unit(s)

APPLIED LESSONS: Voice level 5. Required of BM vocal majors every semester. Upper division.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor consent, MUSC 33D or equivalent
Grading: Letter Graded

MUSC 133B - Voice 6

1-2 unit(s)

APPLIED LESSONS: Voice level 6. Required of BM vocal majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 133A or equivalent, MUSC 25C or equivalent
Grading: Letter Graded

MUSC 133C - Voice 7

1-2 unit(s)

APPLIED LESSONS: Voice level 7. Required of BM vocal majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 133B or equivalent.
Grading: Letter Graded

MUSC 133D - Voice 8

1-2 unit(s)

APPLIED LESSONS: Voice level 8. Required of BM vocal majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 133C or equivalent
Grading: Letter Graded

MUSC 134 - Strings

1-2 unit(s)

Required each semester of upper division string majors. Violin: All major and minor scales and arpeggios in three octaves; double stops; Kreutzer, Fiorillo, Rode etudes; Bach unaccompanied sonatas and standard concert repertoire, including concerti and sonatas by Vivaldi, Bach, Mozart, Mendelssohn, Beethoven and Brahms. Viola: All major and minor scales in three octaves; double stops; standard etudes including Kreutzer, Mazas, Bruni; Bach suites; all standard repertoire including Block suites, Brahms, Hindemith and Schubert. Cello: All major and minor scales and arpeggios in three octaves; double stops; standard etudes including Duport, Popper, Piatti. Solo literature will include selections by Bach, Beethoven, Boccherini, Brahms, Dvorak, Faure, Haydn, Saint-Saens, Shostakovich and Vivaldi. String Bass: All major and minor scales and arpeggios; Simandl Reinshagen, Bille, Storch, Hrabe etudes. Includes solo literature of Bottesini, Dittersdorf, Dragonetti, Koussevitzky, Hindemith, Marcello, Vivaldi and standard orchestral literature. Harp: Literature and techniques, with solo and ensemble performances. Etudes by Salzedo, Lariviere and standard concert works comparable to Ravel Introduction and Allegro, Salzedo Preludes, Prescetti Sonata and Pierre Impromptu CapriGuitar: Literature and technique of the guitar including studies by Shearer, Casassi, Guiliani, Torrega and Segovia, and solos by J. S. Bach, Carulli, De Visee, Fernando Sor and Paganini.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 134A - Strings 5

1-2 unit(s)

APPLIED LESSONS: Strings level 5. Required of BM string majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 34D or equivalent

Grading: Letter Graded

MUSC 134B - Strings 6

1-2 unit(s)

APPLIED LESSONS: Strings level 6. Required of BM string majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 134A or equivalent, MUSC 25C or equivalent

Grading: Letter Graded

MUSC 134C - Strings 7

1-2 unit(s)

APPLIED LESSONS: Strings level 7. Required of BM string majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 135B or equivalent

Grading: Letter Graded

MUSC 134D - Strings 8

1-2 unit(s)

APPLIED LESSONS: Strings level 8. Required of BM string majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 134C or equivalent

Grading: Letter Graded

MUSC 135 - Woodwinds

1-2 unit(s)

Required each semester of upper division woodwind majors. Clarinet: Selections comparable to Mozart Clarinet Concerto, Brahms Sonatas and Weber Concertino. Saxophone: Comprehensive pedagogical approach to study of modern Saxophone technique from classical to jazz to avant-garde. Repertory comparable to Dahl Concerto, Woods Sonata, Wirth Indonesian Landscapes, Snyder Variations. Oboe: Selections comparable to Handel Concerto in G Minor. Haydn Oboe Concerto, Hindemith Oboe Sonata, Barret Oboe Studies. Double-reed construction is required. Flute: Selections comparable to Bach Sonata IV, Debussy Syrinx, Mozart concerti and Varese Density. Bassoon: Sonatas comparable to those of Etler, Saint-Saens and Mozart Sonata for Cello and Bassoon; concerti comparable to those of Weber, J. C. Bach, Mozart and Jacob, and representative excerpts from orchestral and chamber repertoire. Double-reed construction is required.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 135A - Woodwinds 5

1-2 unit(s)

APPLIED LESSONS: Woodwinds level 5. Required of BM woodwind majors every semester. Flute, oboe, saxophone, clarinet or bassoon. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 35D or equivalent

Grading: Letter Graded

MUSC 135B - Woodwinds 6

1-2 unit(s)

APPLIED LESSONS: Woodwinds level 6. Required of BM woodwind majors every semester. Flute, oboe, saxophone, clarinet or bassoon. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 25C or equivalent, MUSC 135A or equivalent

Grading: Letter Graded

MUSC 135C - Woodwinds 7

1-2 unit(s)

APPLIED LESSONS: Woodwinds level 7. Required of BM woodwind majors every semester. Flute, oboe, saxophone, clarinet or bassoon. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 135B or equivalent

Grading: Letter Graded

MUSC 135D - Woodwinds 8

1-2 unit(s)

APPLIED LESSONS: Woodwinds level 8. Required of BM woodwind majors every semester. Flute, oboe, saxophone, clarinet or bassoon. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 135C or equivalent

Grading: Letter Graded

MUSC 136 - Brass

1-2 unit(s)

Required each semester of upper division brass majors. Trumpet: Selections comparable to Haydn Concerto, Hummel Concerto, Arutunian Concerto, Neruda Concerto and Hindemith Sonata. Trombone: Selections comparable to Concerto in B flat by Albrechtsberger or 15 Rhythmical Etudes by Bitsch. French Horn: Selections comparable to Concerto in E flat by Strauss, Concerti Nos. 2 and 4 by Mozart and Hindemith Sonata. Baritone Horn: Selections comparable to literature listed for trombone. Tuba: Selections comparable to Sonata Capriccioso by Takzcs, Concerto by Vaughn Williams and Suite No. 2 by Wilder.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 136A - Vocal-Instrumental Improvisation

1 unit(s)

Advanced vocal and instrumental private lessons. Development of performing skills in various styles, with emphasis on soloing, reading lead sheets and advanced levels of musicianship and musicality.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 136B - Brass 5

1-2 unit(s)

APPLIED LESSONS: Brass level 5. Required of BM brass majors every semester. Trumpet, trombone, french horn, euphonium, tuba. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 36D or equivalent

Grading: Letter Graded

MUSC 136C - Brass 6

1-2 unit(s)

APPLIED LESSONS: Brass level 6. Required of BM brass majors every semester. Trumpet, trombone, french horn, euphonium, tuba. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 25C or equivalent, MUSC 136B or equivalent

Grading: Letter Graded

MUSC 136D - Brass 7

1-2 unit(s)

APPLIED LESSONS: Brass level 7. Required of BM brass majors every semester. Trumpet, trombone, french horn, euphonium, tuba. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 136C or equivalent.

Grading: Letter Graded

MUSC 136E - Brass 8

1-2 unit(s)

APPLIED LESSONS: Brass level 8. Required of BM brass majors every semester. Trumpet, trombone, french horn, euphonium, tuba. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 136D or equivalent.

Grading: Letter Graded

MUSC 137 - Percussion

1-2 unit(s)

Required each semester of upper division percussion majors. Performance on timpani, keyboard percussion and snare drum as well as the accessory percussion instruments. Timpani etudes: Goodman, Firth, Cirone and the classical timpani repertoire. Keyboard repertoire includes Orchestral Mallet Player by Cirone. Goldenberg etudes, standard orchestral literature plus 4-mallet literature. Snare drum methods of Podemski, Whaley and Cirone and the standard orchestral literature.

Prerequisite(s): Audition or instructor consent.

Grading: Letter Graded

MUSC 137A - Percussion 5

1-2 unit(s)

APPLIED LESSONS: Percussion level 5. Required of BM percussion majors every semester. Upper division.

Course is repeatable for up to 2 units.

Prerequisite(s): Audition and instructor consent, MUSC 37D or equivalent.

Grading: Letter Graded

MUSC 137B - Percussion 6

1-2 unit(s)

APPLIED LESSONS: Percussion level 6. Required of BM percussion majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 137A or equivalent, MUSC 25C or equivalent

Grading: Letter Graded

MUSC 137C - Percussion 7

1-2 unit(s)

APPLIED LESSONS: Percussion level 7. Required of BM percussion majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 137B or equivalent.

Grading: Letter Graded

MUSC 137D - Percussion 8

1-2 *unit(s)*

APPLIED LESSONS: Percussion level 8. Required of BM percussion majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 137C or equivalent

Grading: Letter Graded

MUSC 138A - Composition

1 *unit(s)*

Private studio lessons. Advanced applications of the process needed to bring personal musical ideas and concepts to realities, such as compositions or arrangements in concert performance and video productions.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 138B - Composition 5

1-2 *unit(s)*

APPLIED LESSONS: Composition level 5. Required of BM composition majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 4A and MUSC 4B, MUSC 38E

Grading: Letter Graded

MUSC 138C - Composition 6

1-2 *unit(s)*

APPLIED LESSONS: Composition level 6. Required of BM composition majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 25C or equivalent, MUSC 138B

Grading: Letter Graded

MUSC 138D - Composition 7

1-2 *unit(s)*

APPLIED LESSONS: Composition level 7. Required of BM composition majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 102, MUSC 103, MUSC 104 and MUSC 138C

Grading: Letter Graded

MUSC 138E - Composition 8

1-2 *unit(s)*

APPLIED LESSONS: Composition level 8. Required of BM composition majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 138D
Grading: Letter Graded

MUSC 139A - Jazz Studies 5

1-2 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 5. Required of BM Jazz Studies majors every semester. Upper Division.

Prerequisite(s): Audition and instructor consent, MUSC 39D or equivalent
Grading: Letter Graded

MUSC 139B - Jazz Studies 6

1-2 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 6. Required of BM Jazz Studies majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 139A or equivalent, MUSC 25C or equivalent, MUSC 27A
Grading: Letter Graded

MUSC 139C - Jazz Studies 7

1-2 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 7. Required of BM Jazz Studies majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 139B or equivalent
Grading: Letter Graded

MUSC 139D - Jazz Studies 8

1-2 unit(s)

APPLIED LESSONS: Jazz. Vocal or instrumental improvisation, composition or arranging, level 8. Required of BM Jazz Studies majors every semester. Upper division.

Prerequisite(s): Audition and instructor consent, MUSC 139C or equivalent
Grading: Letter Graded

MUSC 140B - Jazz Improvisation-II

2 unit(s)

Continuation of MUSC 40A in greater depth and complexity: developing coherent solos and musical conversations, building bebop vocabulary, working with alternate melodic and rhythmic resources. Vocal, instrumental, and transcription exercises. In-class performance. Emphasis will be placed on bebop compositions, complex song forms, and rhythm changes.

Seminar 1 hour/activity 2 hours.

Course is repeatable for up to 6 units.

Pre/Corequisite(s): MUSC 2A, MUSC 2B, MUSC 6, and MUSC 40A; or equivalent.

Grading: Letter Graded

MUSC 140C - Jazz Improvisation-III

2 unit(s)

Continuation of MUSC 140B in greater depth and complexity: advanced transcription projects, style analysis, developing personal improvisatory style, advanced rhythmic, melodic, and harmonic techniques. Emphasis will be placed on complex jazz compositions-primarily those of Wayne Shorter, Chick Corea, and Tom Harrell.

Seminar 1 hour/activity 2 hours.

Course is repeatable for up to 6 units.

Pre/Corequisite(s): MUSC 2A, MUSC 2B, MUSC 6, and MUSC 40A; or equivalent.

Grading: Letter Graded

MUSC 142 - REP: Art Song Repertoire

1 unit(s)

Content varies each semester, with focus on German, French, Italian and Spanish, English and American, or Russian, Polish, Slavic and Scandinavian literature. Performance practice, language, style and history.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): Upper division standing or instructor consent. Seminar 1 hour/activity 2 hours.

Grading: Letter Graded

MUSC 143 - REP: Collaborative Keyboard Performance

1 unit(s)

For piano majors who wish to broaden their pianistic skills by performing with singers and instrumentalists both in studio sessions and recital situations. A maximum of four units may be repeated.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

MUSC 144 - REP: Solo Lit., Performance, Pedagogy

1 unit(s)

Performance of vocal or piano literature studied in studio lessons, with discussion of technique, pedagogy, recital preparation and interpretive, stylistic and linguistic aspects of literature in a master class setting to develop confidence and serve as a forum for exchange of ideas.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 145 - REP: Performance Concepts

2 unit(s)

Content varies to allow presentation of one-time courses by specialists from artist-faculty and guests. Repeatable for up to 4 units of credit when topic changes.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

MUSC 146 - Introduction to Applied Music Pedagogy

2 unit(s)

An introduction to the fundamentals of teaching applied music for the performing musician.

Prerequisite(s): MUSC 30D, MUSC 34D, MUSC 35D, MUSC 36E or MUSC 37D

Grading: Letter Graded

MUSC 146A - Pedagogy - Piano

2 unit(s)

For piano majors and established teachers who primarily wish to teach. Teaching techniques and application of these skills from elementary to most advanced levels.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

MUSC 147A - Beginning Conducting

2 unit(s)

Basic choral and instrumental conducting techniques.

Misc/Lab: Seminar 1 hour/activity 2 hours.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

MUSC 147B - Advanced Conducting: Instrumental

2 unit(s)

Advanced instrumental conducting techniques. Rehearsal and performance of instrumental groups under supervision.

Misc/Lab: Seminar 1 hour/activity 2 hours.

Prerequisite(s): MUSC 147A or instructor consent.

Grading: Letter Graded

MUSC 147C - Advanced Conducting: Choral

2 unit(s)

Advanced choral conducting techniques. Rehearsal and performance of choral groups under supervision.

Misc/Lab: Lecture 2 hours/Activity 2 hours.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): MUSC 147A or equivalent

Grading: Letter Graded

MUSC 150A - ENS: Concert Choir

1 unit(s)

Ensemble. Large select choral ensemble, specializing in advanced a cappella and symphonic major works from all periods.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 50A or equivalent, audition and instructor consent

Grading: Letter Graded

MUSC 151 - ENS: University Chorales

1 unit(s)

ENS: Rehearsal and performance of choral masterpieces and music with wide popular appeal. Students involved in the University Chorales will participate in either the SJSU Women's Chorus, Men's Glee Club, or other specialized choral ensemble and will have the opportunity to study and perform high quality choral literature.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 51A or equivalent, audition and instructor consent

Grading: Letter Graded

MUSC 152 - ENS: Opera Theater

1 unit(s)

ENS: Training and performance experience in the field of opera. Fully-staged productions of one-act and conventional length works of varying styles.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 52 or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 153 - ENS: University Symphony Orchestra

1 unit(s)

ENS: Rehearsal and performance of standard orchestral and operatic repertory.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 53 or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 154 - ENS: Symphonic Band

1 unit(s)

ENS: Rehearsal and performance of large symphonic band repertory.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 54 or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 155 - Wind Ensemble

1 unit(s)

Major performing group open to all wind instrumentalists by audition. Select group that performs the most advanced and high quality contemporary and traditional literature for wind ensemble from all periods. Programming changes every semester. Performances can include but not be limited to state and national conferences.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 55 or equivalent. Instructor's Consent

Grading: Letter Graded

MUSC 156 - ENS: Spartan Marching Band

1 unit(s)

ENS: Open by permission to all students who play saxophone, brass or percussion instruments. Performs at all home and selected away Spartan football games.

Activity 2 hours.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 56 or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 157 - ENS: Jazz Orchestra

1 unit(s)

ENS: Big band jazz performance for instrumentalists and singers. Classic and new repertoire. Concert performances.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 57 or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 159 - ENS: Afro-Latin Jazz Ensemble

1 unit(s)

ENS: Performance of Afro-Latin jazz and popular music repertoires of the US, the Caribbean, and Latin America. Ensemble techniques and solo improvisation. Concert performances.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 59 or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 160A - ENS: Choraliers

1 unit(s)

ENS: Small select chamber vocal group specializing in music from all periods, Renaissance to Contemporary.

Course is repeatable for up to 5 units.

Prerequisite(s): MUSC 60A or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 160C - ENS: Chamber Music

1 unit(s)

ENS: In-depth chamber music study and performance of standard repertoire with two or more instruments plus piano.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 160D - ENS: Collegium Musicum

1 unit(s)

ENS: Reinforces music history studies through performance. Authenticating performance of pre-Classical music on period instruments and accurate vocal/instrumental practices. Vocal and instrumental, sacred and secular music performed.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 60D or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 160E - ENS: Jazz Singers

1 unit(s)

Performance of advanced literature for chamber jazz chorus in concerts, festivals, and special events. Performance techniques, improvisation, musicianship and studio-recording techniques.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 60E or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 160F - ENS: Small Jazz Ensembles

1 unit(s)

Small-group jazz performance: standard literature, informal ("head") arrangements. In-class and/or public performances.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 1A, MUSC 1B and MUSC 40A, MUSC 40B: or equivalents.

Grading: Letter Graded

MUSC 160G - ENS: Pep Band

1 unit(s)

Limited to twenty-five woodwind, brass and percussion players; performs at home Spartan basketball games and certain campus functions.

Course is repeatable for up to 5 units.

Prerequisite(s): MUSC 60G or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 160H - ENS: Percussion Ensemble

1 unit(s)

Performing class consisting of percussion majors. Master classes during fall semester.

Course is repeatable for up to 5 units.

Prerequisite(s): MUSC 60H or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 160I - ENS: Jazz Ensemble

1 unit(s)

ENS: Large jazz ensemble focused on learning standard repertoire, style, pedagogy and improvisation.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent

Grading: Letter Graded

MUSC 160J - ENS: String Ensemble

1 unit(s)

Chamber works for various string combinations studied and performed. Rehearsal and performance techniques for small chamber groups.

Course is repeatable for up to 5 units.

Prerequisite(s): MUSC 60J or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 160K - ENS: Brass Ensemble

1 unit(s)

Performance of duet, trio, quartet and quintet literature for mixed and homogeneous brass instruments. Literature used represents all style periods with either original or transcription materials.

Course is repeatable for up to 5 units.

Prerequisite(s): MUSC 60K or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 160L - Woodwind Ensemble

1 unit(s)

Chamber works for various woodwind combinations. Rehearsal and performance techniques for small chamber groups.

Course is repeatable for up to 5 units.

Prerequisite(s): MUSC 60L or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 160M - ENS: Saxophone Ensemble

1 unit(s)

Overview of music for saxophone ensemble for two to twenty players. All styles studied from Renaissance to Jazz.

Course is repeatable for up to 5 units.

Prerequisite(s): MUSC 60M or equivalent. Instructor consent.

Grading: Letter Graded

MUSC 160O - Trombone Ensemble

1 unit(s)

Rehearsal and performance of literature for trombone ensemble. Weekly meetings will also include discussion of brass related topics.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 60O or equivalent. Instructor consent

Grading: Letter Graded

MUSC 160S - ModLark - Mobile Device and Laptop Orchestra

1 unit(s)

Music performing ensemble of laptops and mobile communication devices presenting original sonic compositions. Overview of computer music performance, digital instrument design, and collaborative performance practices.

Activity 2 hours.

May be repeated for credit for up to 8 units.

Grading: Letter graded.

MUSC 161 - REP: Styles and Interpretation of Opera I

1 unit(s)

REP: Introduction to styles of opera composition and presentation focusing on opera scenes being presented by the Opera Theater.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): 61 or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 163 - REP: Styles and Interpretation of Opera II

1 unit(s)

REP: Advanced styles of opera composition and presentation focusing on opera scenes being presented by the Opera Theater.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): MUSC 61 or equivalent. Audition and instructor consent.

Grading: Letter Graded

MUSC 164 - New Music Ensemble

1 unit(s)

The New Music Ensemble performs solo, chamber, and large ensemble works drawn from the broad spectrum of contemporary music, including works by living composers.

Activity 2 hours.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent.

Grading: Letter Graded

MUSC 165 - Concert Band

1 unit(s)

Concert Band is an ensemble open to all wind and percussion instrumentalists regardless of major. It is designed for instrumentalists that are still developing rehearsal and performance skills in an ensemble setting that culminates in a concert on campus each semester.

Activity 2 hours.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Open to juniors, seniors and graduate students only.

Grading: Letter Graded

MUSC 166A - Mariachi San Jose

1 unit(s)

Mariachi San José is an advanced-level university ensemble performing repertoire predominantly from Mexico's música ranchera genre. The ensemble maintains an active schedule performing throughout the semester for university and community events. Ensemble participation requires audition.

Students are expected to be proficient in mariachi performance practice, as both vocalist and as an instrumentalist on one of the following instruments: violin, trumpet, guitar, vihuela, guitarrón, and/or arpa folklórico.

Course may be repeated for credit for up to 5 units.

Grading: Letter Graded.

MUSC 167 - Electro-Acoustic Music I

3 unit(s)

Overview of electro-acoustic studio production/research techniques and hands-on study of analog, digital and hybrid synthesis techniques related to composition and performance. Introduction to signal processing, MIDI and basic software/hardware systems applications.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): MUSC 4A and MUSC 4B or instructor consent.

Grading: Letter Graded

MUSC 168 - Electro-Acoustic Music II

3 unit(s)

Continuation of MUSC 167, covering advanced synthesis, programming and production. Development of strategies for sound design and music composition toward applications in studio and performance environments. Introduction to algorithmic composition.

Prerequisite(s): MUSC 167 or instructor consent.

Grading: Letter Graded

MUSC 168J - Techniques of Choral Conducting

1 unit(s)

Hands-on course designed to help music educators and conductors gain choral conducting tools as well as refine conducting technique.

Prerequisite(s): Previous conducting experience

Grading: Letter Graded

MUSC 168N - Teaching Music in Choral Rehearsals

1 unit(s)

Survey course designed to help choral music educators and conductors refine skills for conducting and teaching choirs at all levels. Topics include selecting literature, strengthening musicianship, building a choral program, rehearsal techniques and ensemble development.

Prerequisite(s): Previous Conducting Experience

Grading: Letter Graded

MUSC 170A - Fundamentals of Sound Recording

3 unit(s)

Beginning techniques in studio sound and music recording: terminology, tape editing, overdubbing, microphone technique and production techniques.

Prerequisite(s): MUSC 1A and MUSC 1B.

Grading: Letter Graded

MUSC 170B - Intermediate Sound Recording

3 unit(s)

Intermediate sound recording and processing techniques in audio production: emphasis on microphone techniques, analog processing and multi-track production.

Prerequisite(s): MUSC 170A or instructor consent.

Grading: Letter Graded

MUSC 170C - Advanced Sound Recording Production

3 unit(s)

Advanced production techniques in multi-track recording and digital recording, including sound construction, modulation and digital processing. Emphasis on application of techniques to group productions in synchronized audio-visual media.

Prerequisite(s): MUSC 170B or instructor consent.

Grading: Letter Graded

MUSC 172 - The Arts in U.S. Society

3 unit(s)

Study of American arts and artists in their aesthetic, social, and political contexts, focusing on 20th and 21st centuries. Arts examined may include architecture, poetry, music, visual arts, dance, theatre, performance art, and fiction. Special emphasis on issues of cultural diversity and social justice.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CA 172 / ENGL 172 / TA 172. Humanities is responsible for scheduling.

MUSC 173 - Thinking About Contemporary World Arts

3 unit(s)

An interdisciplinary investigation of the connections between the contemporary arts and global cultures. Use of critical and creative thinking to develop global understanding and to explore personal and cultural identities.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CA 173 / ENGL 173 / TA 173. Humanities is responsible for scheduling.

MUSC 180 - Individual Studies

1-2 unit(s)

May be repeated up to 4 units of credit.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Upper division standing and instructor and director consent.

Grading: Credit/No Credit

MUSC 181 - Concert Listening II

1 unit(s)

Required active involvement of all music majors in the professional musical life of the campus and community through attending programs from the master list published each semester and writing five critical reviews.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Upper division music major.

Grading: Credit/No Credit

MUSC 182 - Senior Project

1 unit(s)

Senior capstone project for B.A. in music. By advisement and according to degree requirements either a senior thesis, lecture/demonstration or lecture/recital.

Prerequisite(s): Upper division standing, instructor consent and area approval.
Grading: Credit/No Credit

MUSC 185A - Music for Children

3 unit(s)

Music fundamentals for the classroom teacher. Singing, playing instruments, movement, reading notation, creating music. Kodaly, Orff, Dalcroze, techniques emphasized with multicultural approach. Technology for elementary music through lab experience.

Prerequisite(s): Upper division standing.
Grading: Letter Graded

MUSC 190A - Honors Project

1 unit(s)

Prerequisite(s): Upper division standing; instructor and director consent.
Grading: Credit/No Credit

Note(s): MUSC 190B must be completed before total of 3 units is granted.

MUSC 190B - Honors Project

2 unit(s)

Prerequisite(s): MUSC 190A.
Grading: Credit/No Credit

MUSC 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

MUSC 200 - Methods of Music Research & Writing

3 unit(s)

Use and evaluation of resources for music research and writing; problems in critical writing and music literature history.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

MUSC 201 - Seminar in Music History

3 unit(s)

Research and analytical studies on selected topics in music history. May be repeated once for elective credit.

Prerequisite(s): MUSC 200, passage of Graduate Entrance Evaluation or equivalent, and permission of instructor.

Grading: Letter Graded

MUSC 202 - Seminar in Music Systems & Theory

3 unit(s)

Research and analytical studies of selected theoretical and applied compositional techniques in music.

Prerequisite(s): MUSC 200, passage of Graduate Entrance Evaluation or equivalent, and permission of instructor.

Grading: Letter Graded

Note(s): Emphasis may vary.

MUSC 203 - Seminar in Style & Performance Practices

3 unit(s)

Study of the history of performance practices and applications in contemporary performances. May be repeated once for elective credit.

Prerequisite(s): MUSC 200, passage of Graduate Entrance Evaluation or equivalent, and permission of instructor.

Grading: Letter Graded

MUSC 220 - Seminar in Advanced Conducting

3 unit(s)

Problems in conducting, advanced score reading and interpretation.

May be repeated for credit for up to 12 units.

Prerequisite(s): Two semesters of undergraduate conducting (or equivalent) and instructor consent.

Grading: Letter Graded

MUSC 222 - Special Topics in Music

1-3 unit(s)

Study of specialized subjects in music history, theory, performance or education.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 224 - Supervised Graduate Study

1-2 unit(s)

Repeatable for credit

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Audition and/or consent of instructor and graduate advisor.

Grading: Letter Graded

MUSC 230 - Graduate Piano Lessons: Secondary

1 unit(s)

Applied piano lessons for graduate student in a secondary area. Continuation of work from undergraduate study.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 232 - Advanced Field Experience--Pedagogy

1 unit(s)

Provides opportunity for the qualified graduate student to be involved in planning and assisting in teaching college courses in music. The work is carried on in conjunction with the regular college teacher and must have this supervising teacher's approval.

Course may be repeated for credit for up to 4 units.

Grading: Credit/No Credit

MUSC 233 - Graduate Voice Lessons: Secondary

1 unit(s)

Applied voice lessons for graduate student in a secondary area. Continuation of work from undergraduate study.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 234 - Graduate String Lessons: Secondary

1 unit(s)

Applied string lessons for graduate student in a secondary area. Continuation of work from undergraduate study.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 235 - Graduate Woodwind Lessons: Secondary

1 unit(s)

Applied woodwind (clarinet, oboe, flute, saxophone or flute) lessons for graduate student in a secondary area. Continuation of work from undergraduate study.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 236 - Graduate Brass Lessons: Secondary

1 unit(s)

Applied Brass (trumpet, French horn, trombone or tuba) lessons for graduate student in a secondary area. Continuation of work from undergraduate study.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 237 - Graduate Percussion Lessons: Secondary

1 unit(s)

Applied percussion lessons for graduate student in a secondary area. Continuation of work from undergraduate study.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 239 - Graduate Jazz Lessons: Secondary

1 unit(s)

Applied Jazz (saxophone, trumpet, guitar, piano, or trombone) lessons for graduate student in a secondary area. Continuation of work from undergraduate study.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 241A - Graduate Applied Lyric Diction

1 unit(s)

Pronunciation and applied execution of correct diction in Italian, Latin, and English for singers in a master

class setting. Performance of specific literature of these languages with emphasis on correct usage of the International Phonetic Alphabet (IPA) for lyric diction.

Activity 2 hours.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 241B - Graduate Applied Lyric Diction

1 unit(s)

Pronunciation and applied execution of correct diction in French and German for singers in a master class setting. Performance of specific literature of these languages with emphasis on correct usage of the International Phonetic Alphabet (IPA) for lyric diction.

Activity 2 hours.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 242 - Graduate Art Song Repertoire

1 unit(s)

Content varies each semester, with focus on German, French, Italian and Spanish, English and American, or Russian, Polish, Slavic and Scandinavian literature. Performance practice, language, style and history.

Activity 2 hours.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

MUSC 250A - ENS: Graduate Concert Choir

1 unit(s)

ENS: Graduate large select choral ensemble, specializing in advanced acappella and symphonic major works from all periods.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 251 - ENS: Graduate University Chorales

1 unit(s)

ENS: Rehearsal and performance of choral masterpieces and music with wide popular appeal. Graduate students involved in the University Chorales will participate in either the SJSU Women's Chorus, Men's Glee Club, or other specialized choral ensemble and will have the opportunity to study and perform high quality choral literature.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 252 - ENS: Graduate Opera Theater

1 unit(s)

ENS: Training and performance experience in the field of opera. Fully-staged productions of one-act and conventional length works of varying styles.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 253 - ENS: Graduate University Symphony Orchestra

1 unit(s)

ENS: Rehearsal and performance of standard orchestral and operatic repertory for graduate students.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 255 - ENS: Graduate Wind Ensemble

1 unit(s)

ENS: Major performing group open to all graduate wind and percussion instrumentalists by audition. Select group that performs the most advanced and high quality contemporary and traditional literature for wind ensemble from all periods. Performances can include but not be limited to state and national conferences.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 259 - ENS: Graduate Latin Jazz Ensemble

1 unit(s)

ENS: Performance of Afro-Latin jazz and popular music repertoires of the US, the Caribbean, and Latin America. Graduate level ensemble techniques and solo improvisation. Concert performances.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260A - ENS: Graduate Choraliers

1 unit(s)

ENS: Small select chamber vocal group of graduates and undergraduates specializing in music from all periods, Renaissance to Contemporary.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260C - ENS: Graduate Chamber Music

1 unit(s)

ENS: Graduate level in-depth chamber music study and performance of standard repertoire with two or more instruments plus piano.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260D - ENS: Graduate Collegium

1 unit(s)

ENS: Graduate. Reinforces music history studies through performance. Authenticating performance of pre-Classical music on period instruments and accurate vocal/instrumental practices. Vocal and instrumental, sacred and secular music performed.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260F - ENS: Graduate Small Jazz Ensembles

1 unit(s)

ENS: Graduate small-group jazz performance: standard literature, informal ("head") arrangements. In-class and/or public performances.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260H - ENS: Graduate Percussion Ensemble

1 unit(s)

ENS: Performance class consisting of graduate and undergraduate percussion majors. Master classes during fall semester. Small to larger percussion ensemble works performed.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260J - ENS: Graduate String Ensemble

1 unit(s)

ENS: Graduate chamber works for various string combinations studied and performed. Rehearsal and performance techniques for small chamber groups.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260K - ENS: Graduate Brass Ensemble

1 unit(s)

ENS: Graduate level performance of duet, trio, quartet and quintet literature for mixed and homogeneous brass instruments. Literature used represents all style periods with either original or transcription materials.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260L - ENS: Graduate Woodwind Ensemble

1 unit(s)

Graduate level chamber works for various woodwind combinations. Rehearsal and performance techniques for small chamber groups.

Activity 2 hours.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval.

Grading: Letter Graded

MUSC 260M - ENS: Graduate Saxophone Ensemble

1 unit(s)

ENS: Graduate overview of and performance of music for saxophone ensemble for two to twenty players. All styles studied from Renaissance to Jazz.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Audition and instructor approval

Grading: Letter Graded

MUSC 260O - ENS: Graduate Trombone Choir

1 unit(s)

ENS: Rehearsal and performance of literature for trombone ensemble. Weekly meetings will also include discussion of brass related topics.

Activity 2 hours.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent.

Grading: Letter Graded

MUSC 260S - ModLark - Mobile Device and Laptop Orchestra

1 unit(s)

Music performing ensemble of laptops and mobile communication devices presenting original sonic compositions. Overview of computer music performance, digital instrument design, and collaborative performance practices.

May be repeated for credit for up to 8 units.

Grading: Letter graded.

MUSC 264 - Graduate New Music Ensemble

1 unit(s)

The New Music Ensemble performs solo, chamber, and large ensemble works drawn from the broad spectrum of contemporary music, including works by living composers.

Activity 2 hours.

Course may be repeated for credit for up to 5 units.

Prerequisite(s): Audition and instructor consent.

Grading: Letter Graded

MUSC 266A - Mariachi San Jose

1 unit(s)

Mariachi San José is an advanced-level university ensemble performing repertoire predominantly from Mexico's *música ranchera* genre. The ensemble maintains an active schedule performing throughout the semester for university and community events. Ensemble participation requires audition.

Students are expected to be proficient in mariachi performance practice, as both vocalist and as an instrumentalist on one of the following instruments: violin, trumpet, guitar, vihuela, guitarrón, and/or arpa folklórico.

Course may be repeated for credit for up to 5 units.

Grading: Letter Graded.

MUSC 297 - Master's Recital or Composition

1-3 unit(s)

Prerequisite(s): Advancement to candidacy and consent and approval of graduate study instructor, graduate advisor, and School of Music department chair.

Grading: Credit/No Credit/RP.

MUSC 298 - Special Study

1-2 unit(s)

Special study in the field of music (excluding applied instruction).

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Consent of instructor, graduate advisor and the School of Music director.

Grading: Mandatory Credit/No Credit/RP

MUSC 299 - Master's Thesis

1-3 unit(s)

Prerequisite(s): Advancement to candidacy and consent and approval of graduate study instructor, graduate advisor and School of Music department chair.

Grading: Credit/No Credit/RP.

MUSC 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis, composition, or project

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semesters in a thesis, composition, or project class.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Music Education

MUED 140 - Foundations of Music Education

3 unit(s)

Survey of music education's historical, philosophical, psychological and sociological foundations.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

MUED 142 - Introduction to Music Education: Early Field Experience

1 unit(s)

Introduction to teaching music in the public schools. Includes in-school paraprofessional work in approved music program under supervision of university faculty and master teachers.

Prerequisite(s): Sophomore standing.

Grading: Credit/No Credit

MUED 170A - Teaching Instrumental Music

2 unit(s)

Materials, literature, methods and pedagogy for teachers of instrumental music.

Grading: Letter Graded

MUED 170B - Teaching Choral Music

2 unit(s)

Materials, literature, methods and pedagogy for teachers of choral music.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

MUED 175 - Practicum in Music Education

3 unit(s)

Practical experience in music education including pedagogy, classroom management and practice teaching.

Prerequisite(s): MUED 140, MUED 170, MUED 147A, MUED147B or instructor consent.

Grading: Letter Graded

MUED 184Y - Student Teaching II - Classroom Teaching

4 unit(s)

Minimum 80-120 class periods of classroom, teaching lab or field teaching in music subjects, grades K-12. Includes seminar.

Prerequisite(s): Upper division standing and joint approval of major and education departments.

Grading: Credit/No Credit

MUED 184Z - Student Teaching III-Classroom Teaching

4 unit(s)

To be taken concurrently or in a different semester than 184Y. May be in a different subject or in different school and will be at a different grade level.

Prerequisite(s): Upper division standing and joint approval of major and education departments.

Grading: Credit/No Credit

MUED 188 - Music Ed Trends

1-2 unit(s)

Investigation of current trends in music education. Topics vary with course offering.

Grading: Credit/No Credit

MUED 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 6 units.

Grading: Mixed Grading

MUED 221 - Foundations of Music Education

3 unit(s)

This course provides an introduction to graduate studies in music education. Topics include; historical contexts; philosophy; sociology, aesthetics; psychology; and learning theory in music education.

Prerequisite(s): Graduate student standing and instructor consent

Grading: Letter Graded

MUED 228 - Research in Music Education

3 unit(s)

This course examines research in music education, concentrating on qualitative, quantitative, and historical methodologies. Attention will focus on applications of research within music education, and the course will culminate in a capstone project using one of these research methodologies.

Prerequisite(s): Graduate student standing and instructor consent

Grading: Letter Graded

MUED 232 - Directions and Issues in Music Education

3 unit(s)

This course examines current issues and directions in music education. Topics include historical, sociological, and philosophical contexts for music education; learning and development issues; curriculum and pedagogy; assessment; applied research in music education; and leadership development.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Graduate student standing and instructor consent

Grading: Letter Graded

MUED 370A - Methodology for Music Educators: Elementary K-8

2 unit(s)

Study of Kodaly, Orff and Dalcroze elementary methods including a multicultural emphasis. A review of materials for the comprehensive elementary music curriculum. Peer teaching/field observations of classrooms, choral and instrumental classes required.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Note(s): Required for certification.

MUED 370B - Methodology for Music Educators: Secondary

2 unit(s)

Prepares secondary music instructors to teach non-performance courses, including music appreciation, theory, technology, history and multicultural survey. Peer teaching and field observations required. Organization of comprehensive secondary music departments included.

Prerequisite(s): MUED 370A.

Grading: Letter Graded

MUED 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semesters in a thesis, composition, or project class.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Native American and Indigenous Studies

NAIS 1 - Intro to Native American and Indigenous Studies

3 unit(s)

Introduction to the epistemological frameworks of Native American and Indigenous Studies, emphasizing settler colonialism, sovereignty, self-determination, autonomy, and decolonization. Students will learn how to recognize stereotypes and ethnocentrism about Native Americans and Indigenous Peoples that are prevalent today.

Satisfies Area F: Ethnic Studies.

Grading: Letter Graded.

NAIS 2 - California Indigenous Peoples

3 unit(s)

Origins, social organization, geographic and political histories of Native Americans in California, and the effects of colonialism and settler colonialism. Exploration of the evolving relationship of Indigenous peoples and nations with settler colonial societies. Course surveys California Indigenous peoples, selected tribal community histories, federal and state Indian policies, and California Indigenous history.

Satisfies Area F: Ethnic Studies.

Grading: Letter Graded.

Nuclear Science

NUCS 121S - Radiation Safety

1-2 unit(s)

Health hazards involved in working with radioactive substances. Physical nature of hazards, biological effects, standards of permissible exposures, safety precautions and protection techniques. Two units meet State of California recommendations.

Prerequisite(s): Lower division calculus, chemistry and physics.

Grading: Letter Graded

Cross-listed with CHEM 121S / PHYS 121S. Chemistry is responsible for scheduling.

NUCS 126 - Introduction to Nuclear Science

3 unit(s)

Properties of the atomic nucleus. Applications of nuclear science in biology, chemistry, engineering, geology and physics.

Prerequisite(s): Lower division calculus, chemistry and physics.

Grading: Letter Graded

Cross-listed with CHEM 126 / PHYS 126. Chemistry is responsible for scheduling.

NUCS 127 - Nuclear Science Lab

3 unit(s)

Basic techniques and procedures used in nuclear science. Nuclear decay, nuclear reactions, radiation detection and measurements, nuclear analytical methods and tracer techniques.

Misc/Lab: Lecture 1 hour/lab 6 hours.

Prerequisite(s): NUCS 121S, CHEM 100W and CHEM 126 (with grades of "C" or better; "C-" not accepted); or instructor consent.

Grading: ABC-/No Credit

Cross-listed with CHEM 127 / PHYS 127. Chemistry is responsible for scheduling.

NUCS 298 - Research

1-6 unit(s)

Directed individual laboratory work or field studies in radiological health physics and nuclear science for students with adequate preparation. A maximum of 8 units may be repeated.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Instructor consent.

Grading: Mandatory Credit/No Credit/RP

NUCS 299 - Master's Thesis

2-4 unit(s)

Prerequisite(s): NUCS 298, instructor consent and advancement to candidacy for the master's degree.

Grading: Mandatory Credit/No Credit/RP

Nursing

NURS 10 - Leadership I

2 unit(s)

An overview of professional nursing role and scope of practice. Includes: nursing core values, professional role, nursing process, systems theory, code of ethics, Nurse Practice Act, conflict resolution, communication, the transformative process from novice to expert, and self-care strategies.

Prerequisite(s): Admission to Nursing program.

Grading: Letter Graded

Note(s): Nursing BS Semester 1.

NURS 11 - Introduction to Pharmacology

2 unit(s)

An introduction to major medication classifications. Emphasizes the nurse's role in medication administration including assessments, interventions, and expected outcomes of commonly used medications.

Prerequisite(s): Admission to Nursing program.

Grading: Letter Graded

Note(s): Nursing BS Semester 1.

NURS 12 - Health Assessment & Skills I

3 unit(s)

Foundational nursing skills including health assessment, nursing process, communication, psychomotor skills and critical thinking in the context of diverse client populations. Person-centered care and safety are emphasized through the use of simulation.

Lecture 1 hours/Lab 6 hours.

Prerequisite(s): Admission to Nursing program.

Grading: Letter Graded

Note(s): Nursing BS Semester 1.

NURS 13A - Gerontological Nursing Theory

2 unit(s)

Introduction to gerontological nursing, including developmental stages and transitions of aging, expected age-related physiological and psychological changes and assessment findings, promotion of health for the older adult client, resources available to seniors, and end of life issues.

Prerequisite(s): Admission to Nursing program.

Corequisite(s): NURS 13B.

Grading: Letter Graded

Note(s): Nursing BS Semester 1.

NURS 13B - Geriatric Nursing Practicum

1 unit(s)

Provide supervised nursing care to geriatric clients in a variety of healthcare settings. Focus on applying professional fundamental nursing skills including therapeutic communications, nursing assessment and health promotion.

Prerequisite(s): Admission to Nursing program.

Corequisite(s): NURS 13A.

Grading: Credit/No Credit

Note(s): Nursing BS Semester 2.

NURS 20A - Adult Care Management I

4 unit(s)

Concepts related to care of the adult with selected medical-surgical conditions. Emphasis is on the nursing process and developing competence in providing and coordinating nursing care.

Prerequisite(s): NURS 10, NURS 11, NURS 12, NURS 13A, NURS 13B, and NURS 100WE.

Corequisite(s): NURS 20B.

Grading: Letter Graded

Note(s): Nursing BS Semester 2.

NURS 20B - Adult Care Clinical Practicum I

3 unit(s)

Provides supervised nursing care to hospitalized adults and their families. Emphasizes systematic assessment, nursing process, and clinical reasoning. Builds competency in selected nursing therapies, and in developing the role of the professional nurse.

Lab 12 hours.

Prerequisite(s): NURS 10, NURS 11, NURS 12, NURS 13A, NURS 13B, and NURS 100WE.

Corequisite(s): NURS 20A.

Grading: Credit/No Credit

Note(s): Nursing BS Semester 2.

NURS 22 - Health Assessment & Skills in Nursing II

2 unit(s)

Integration of clinical reasoning and client context in performing complex nursing therapies and complex psychomotor skills. Person-centered care and patient safety are emphasized through the use of simulation.

Lecture 1 hour/Lab 3 hours.

Prerequisite(s): NURS 10, NURS 11, NURS 12, NURS 13A, NURS 13B, and NURS 100WE.

Grading: Letter Graded

Note(s): Nursing BS Semester 2.

NURS 32 - Health Assessment & Skills III

1 unit(s)

Focuses on the childrearing and childbearing population with integration of clinical reasoning (nursing process) during health assessments and psychomotor skills to provide safe client care in a variety of settings.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): NURS 20A, NURS 20B, NURS 22, NURS 123A, and NURS 123B.

Grading: Letter Graded

Note(s): Nursing BS Semester 3.

NURS 100WE - Evidence Based Practice Writing Workshop

3 unit(s)

Examines the systematic inquiry of basic research concepts and processes. Evidence-based practice (EBP) results from the appraisal of the best scientific evidence available to guide clinical decision-making and thus to achieve quality patient outcomes.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): Admission to Nursing program. GE A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing.

Grading: Letter Graded

Note(s): Nursing BS Semester 1. Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

NURS 110ITL - Global Influences on Health

3 unit(s)

Examination of major issues influencing health and human services and their delivery on a global scale. The health care needs of a diverse and multicultural population, health care disparities, and strategies to address global health needs are explored. Includes special populations service provision, advocacy, patient/client centered care, psycho-social aspects of disease and wellness, health promotion and education, quality, cost controls, and multidisciplinary team approaches to service delivery.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): All of SJSU Studies courses require upper division standing.

NURS 112 - Professional Practice Success I

3 unit(s)

First course in a two course sequence focusing on the application of nursing concepts that are essential to successful professional nursing practice: improving clinical reasoning, linking theory to practice, and implementing a plan of self-care for maintaining longevity in the profession.

Prerequisite(s): Admission to the RN to BSN Nursing Program.

Grading: Letter Graded

Note(s): RN to BSN Nursing Semester 1.

NURS 113 - Professional Practice Success II

3 unit(s)

Second course in a two course sequence focusing on the application of nursing concepts essential to successful professional nursing practice: improving clinical reasoning, developing a systems viewpoint, and implementing change in the current healthcare setting.

Prerequisite(s): NURS 100WE, NURS 112, and NURS 171.

Grading: Letter Graded

Note(s): Nursing Semester 2.

NURS 123A - Mental Health Theory

3 unit(s)

Psychiatric-mental health theoretical nursing concepts for culturally diverse clients. Emphasis on therapeutic communication, health promotion and prevention, advocacy and ethical issues for individuals and families with complex health problems.

Prerequisite(s): NURS 10, NURS 11, NURS 12, NURS 13A, NURS 13B, and NURS 100WE.

Corequisite(s): NURS 123B.

Grading: Letter Graded

Note(s): Nursing BS Semester 2.

NURS 123B - Mental Health Practicum

2 unit(s)

Provides supervised nursing care to diverse individuals with mental health conditions in a variety of settings. Emphasis on therapeutic communications and symptom management, screening interventions, health promotion, and interdisciplinary care coordination.

Lab 6 hours.

Prerequisite(s): NURS 10, NURS 11, NURS 12, NURS 13A, NURS 13B, and NURS 100WE.

Corequisite(s): NURS 123A.

Grading: Credit/No Credit

Note(s): RN to BSN Nursing Semester 2.

NURS 136 - Professional Role Development III

2 unit(s)

Expansion of the professional role in the childbearing-childrearing setting to include further application of: evidence-based practice, therapeutic communication, developmentally appropriate teaching/learning strategies, informatics, health literacy, developmental and cultural assessment, leadership and ethical principles, grief and loss.

Grading: Letter Graded

NURS 148AI - Senior Practicum - International Experience

4 unit(s)

Use a systems approach to research, leadership management, theory and beginning clinical proficiency, in collaboration with other health care members in an international setting.

Activity 8 hours.

Prerequisite(s): Final semester of Nursing, BS or Nursing, RN to BSN Concentration, BSN.

Corequisite(s): NURS 138 or NURS 178 or NURS 178A.

Grading: Credit/No Credit

NURS 161 - Leadership II

2 unit(s)

Safe practice of professional nursing, including interdisciplinary communication, bioethical and legal concerns, cost of care, end-of-life care, and health literacy and disparities for culturally diverse clients.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): NURS 20A, NURS 20B, NURS 22, NURS 123A, and NURS 123B.

Grading: Letter Graded

Note(s): Nursing BS Semester 3.

NURS 164AR - Community Health Theory for Nursing BS Program

3 unit(s)

Community health concepts and the care of the population, families, and individuals with complex health problems using health promotion and wellness strategies across the life span. Emphasis on core public health competencies and the influence of health policy on the populations' health.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): NURS 20A, NURS 20B, NURS 22, NURS 123A and NURS 123B.

Corequisite(s): NURS 164B.

Grading: Letter Graded

Note(s): Nursing BS Semester 3.

NURS 164B - Community Health Practicum

3 unit(s)

Provides supervised nursing care to culturally diverse child-rearing families and children using concepts of systems theory in acute care, home and community settings.

Lab 9 hours.

Prerequisite(s): NURS 20A, NURS 20B, NURS 22, NURS 123A, and NURS 123B.

Grading: Credit/No Credit

Note(s): Nursing BS Semester 3.

NURS 165A - Child Health Theory

3 unit(s)

Direct health care of children and the childrearing family in various health care settings. Exploration of bio-psychosocial processes involved in health, life transitions, and illness with identification of related preventive and therapeutic nursing behaviors.

Prerequisite(s): NURS 20A, NURS 20B, NURS 22, NURS 123A, and NURS 123B.

Grading: Letter Graded

Note(s): Nursing BS Semester 3.

NURS 165B - Child Health Practicum

2 unit(s)

Provides supervised nursing care to culturally diverse child-rearing families and children using concepts of systems theory in acute care, home and community settings.

Lab 6 hours.

Prerequisite(s): NURS 20A, NURS 20B, NURS 22, NURS 123A, and NURS 123B.

Corequisite(s): NURS 165A.

Grading: Credit/No Credit

Note(s): Nursing BS Semester 4.

NURS 166 - Simulation I

1 unit(s)

Provides objective-driven learning activities using a variety of simulation modalities. Faculty-guided simulations provide opportunities for developing problem identification and clinical reasoning skills across the lifespan. Reflective thinking is incorporated into all simulated experiences.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): NURS 32, NURS 161, NURS 164B, NURS 165A, and NURS 165B.

Grading: Letter Graded

Note(s): Nursing BS Semester 4.

NURS 167A - Adult Care Management II

4 unit(s)

Concepts and care related to adult medical-surgical clients in the acute care setting. Systems approach integrates human responses to alterations in physiological functioning related to disorders of the musculoskeletal, neurological, gastrointestinal, integumentary, endocrine systems and oncologic disorders.

Prerequisite(s): NURS 32, NURS 161, NURS 164B, NURS 165A, and NURS 165B.

Corequisite(s): NURS 167B.

Grading: Letter Graded

Note(s): Nursing BS Semester 4.

NURS 167B - Adult Care Clinical Practicum II

3 unit(s)

Provides an advanced level of supervised nursing care to hospitalized adults and their families. Emphasizes systematic assessment, nursing process, and clinical reasoning. Promotes development of competency in professional registered nurse role and application of clinical judgment.

Lab 9 hours.

Prerequisite(s): NURS 32, NURS 161, NURS 164A, NURS 164B, NURS 165A, and NURS 165B.

Corequisite(s): NURS 167A.

Grading: Credit/No Credit

Note(s): Nursing BS Semester 4.

NURS 168A - Maternal Newborn Theory

3 unit(s)

Direct health care of newborns and the childbearing family in various health care settings. Exploration of bio-psychosocial processes involved in health, life transitions, and illness with identification of related preventive and therapeutic nursing behaviors.

Prerequisite(s): NURS 32, NURS 161, NURS 164B, NURS 165A, and NURS 165B.

Corequisite(s): NURS 168B.

Grading: Letter Graded

Note(s): Nursing BS Semester 4.

NURS 168B - Maternal Newborn Practicum

2 unit(s)

Practicum provides family-centered care to culturally diverse childbearing families using concepts of systems theory in acute care, home and community settings.

Lab 6 hours.

Prerequisite(s): NURS 32, NURS 161, NURS 164B, NURS 165A, and NURS 165B.

Corequisite(s): NURS 168A.

Grading: Credit/No Credit

Note(s): RN to BSN Nursing Semester 1.

NURS 171 - Theoretical Foundations

3 unit(s)

Theoretical bases for health and illness management of culturally diverse individuals, families, and groups. Concepts include nursing and change theories, quality measurement, patient safety, clinical reasoning and judgment, health promotion, and health literacy.

Prerequisite(s): Admission to the RN to BSN Nursing Program.

Grading: Letter Graded

Note(s): RN to BSN Nursing Semester 2.

NURS 172R - Community Health Theory for RN to BSN Program

3 unit(s)

Community health concepts and the care of the population, families, and individuals with complex health problems using health promotion and wellness strategies across the life span. Emphasis on core public health competencies and the influence of health policy on the populations' health.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): NURS 100WE, NURS 112, and NURS 171.

Corequisite(s): NURS 173.

Grading: Letter Graded

Note(s): RN to BSN Nursing Semester 2.

NURS 173 - Community Health Practicum

3 unit(s)

Utilizes a systems approach to promoting health and wellness for individuals and groups across the lifespan. Applies nursing process to care of clients from diverse populations in the community in a variety of settings.

Clinical 9 hours.

Prerequisite(s): NURS 100WE, NURS 112, and NURS 171.

Grading: Credit/No Credit

Note(s): Nursing Semester 5.

NURS 177 - Senior Preceptorship

4 unit(s)

Independent, precepted experience in a clinical setting. Uses a systems approach integrating knowledge of research, leadership, pathophysiology, and nursing into practice.

Lab 12 hours.

Prerequisite(s): NURS 166, NURS 167A, NURS 167B, NURS 168A, and NURS 168B.

Grading: Credit/No Credit

Note(s): Nursing BS Semester 5.

NURS 177A - Senior Preceptorship

3 unit(s)

Independent, precepted experience in a clinical setting. Uses a systems approach integrating knowledge of research, leadership, pathophysiology, and nursing into practice.

Clinical 9 hours.

Prerequisite(s): NURS 113, and NURS 173.

Grading: Credit/No Credit

Note(s): RN to BSN Nursing Semester 5.

NURS 178 - Leadership III

3 unit(s)

Demonstration of the professional nurse role. Includes integration of theoretical concepts in the practice setting. Encompasses models and theories of nursing management and leadership, teamwork, communication, cultural competence, economics, health disparities, quality improvement, ethics, patient safety, career development.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): NURS 166, NURS 167A, NURS 167B, NURS 168A, and NURS 168B.

Grading: Letter Graded

Note(s): Nursing BS Semester 5.

NURS 178A - Leadership

3 unit(s)

Demonstration of the professional nurse role. Includes integration of theoretical concepts in the practice setting. Encompasses models and theories of nursing management and leadership, teamwork, communication, cultural competence, economics, health disparities, quality improvement, ethics, patient safety, career development.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): NURS 113, and NURS 173.

Grading: Letter Graded

Note(s): BSN Nursing.

NURS 180 - Individual Studies

1-4 unit(s)

Individual study or project work on a selected problem or professional issue in nursing.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Arrangement must be made with a nursing faculty member and approved by the school director during the semester prior to taking the course.

Grading: Credit/No Credit

NURS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

NURS 200 - Population Based Health Care Systems

3 unit(s)

Planning, policy, organization, and financing of health care systems. Prepares nurses to participate in design, implementation, and evaluation of ethical, cost-effective, quality health care in health care systems to improve health care delivery and client outcomes.

Prerequisite(s): Admission to nursing masters program

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

NURS 201 - Clinical Leadership Role Development

2 unit(s)

The purpose of this course is to prepare students for leadership roles in healthcare through the study, analysis, and application of nursing leadership and management theories and principles.

Prerequisite(s): Acceptance into nursing masters program

Grading: Letter Graded

NURS 202 - Theoretical Foundations

2 unit(s)

Addresses the theoretical underpinnings of nursing practice and research, including a wide range of theories from nursing and other disciplines. Students develop and apply relevant criteria in evaluating theories for practice and research with individuals, families and communities.

Grading: Letter Graded

NURS 205F - Foot and Nail Care

5 unit(s)

A theory-based didactic course incorporating both simulation and skills for the learning of selected disorders of the foot and nail and practice of advanced specialized psychomotor and cognitive skills used to assess and manage the conditions of lower extremity, foot, and nail.

Lecture 4 hours; Laboratory 2 hours.

Prerequisite(s): RN with a minimum of a Baccalaureate degree and at least one year of clinical nursing experience post RN licensure.

Grading: Letter Graded

Note(s): The course consists of 60 hours of didactic learning and 40 hours of practicum. Duration of the didactic portion is five weeks but practicum can be completed within six months upon completion of the didactic portion. Students are required to achieve a final score of at least 80% on the didactic portion and a passing credit in practicum. Upon completion of all the requirements, students will be eligible to take the ostomy specialty exam offered by the Wound, Ostomy and Continence Nursing Certification Board (WOCNCB).

NURS 205O - Ostomy Care

5 unit(s)

A theory-based course incorporating both simulation and skills for the learning of selected disorders of the gastrointestinal and genitourinary systems and practice of specialized psychomotor and cognitive skills used to assess and manage fecal and urinary diversions, continent diversions, fistulas, and percutaneous tubes.

Lecture 4 hours; Laboratory 2 hours.

Prerequisite(s): RN with a minimum of a Baccalaureate degree and at least one year of clinical nursing experience post RN licensure.

Grading: Letter Graded

Note(s): The course consists of 60 hours of didactic learning and 40 hours of practicum. Duration of the didactic portion is five weeks but practicum can be completed within six months upon completion of the didactic portion. Students are required to achieve a final score of at least 80% on the didactic portion and a passing credit in practicum. Upon completion of all the requirements, students will be eligible to take the ostomy specialty exam offered by the Wound, Ostomy and Continence Nursing Certification Board (WOCNCB).

NURS 205W - Wound Care

5 unit(s)

A theory-based continuing education course incorporating simulation, psychomotor skills, and clinical practice. Students develop the knowledge and skills to assess selected disorders of the integumentary and

arterial-venous systems and manage wounds, fistulas, percutaneous tubes, and pressure ulcers.

Lecture 4 hours; Laboratory 2 hours.

Prerequisite(s): RN with a minimum of a Baccalaureate degree and at least one year of clinical nursing experience post RN licensure.

Grading: Letter Graded

Note(s): The course consists of 60 hours of didactic learning and 40 hours of practicum. Duration of the didactic portion is five weeks but practicum can be completed within six months upon completion of the didactic portion. Students are required to achieve a final score of at least 80% on the didactic portion and a passing credit in practicum. Upon completion of all the requirements, students will be eligible to take the wound specialty exam offered by the Wound, Ostomy and Continence Nursing Certification Board (WOCNCB).

NURS 212 - Curriculum Development in Nursing

3 unit(s)

Curriculum development with application to programs in nursing and health education. Focuses on formulation of conceptual framework for curriculum development and utilization in making decisions regarding the objectives, learning experiences, and evaluation strategies.

Grading: Letter Graded

NURS 214 - Nurse Educator Theory and Direct Care Practicum I

4 unit(s)

The theory and clinical course focus on direct care clinical experience with the application of advanced nursing practice. Using advanced nursing concepts, models, and theories, the student will demonstrate culturally appropriate, safe, ethical practice with increasing role responsibility.

Lecture 1 hour, Clinical 9 hours.

Prerequisite(s): NURS 212.

Grading: Letter Graded

NURS 216 - Academic Theory & Practicum II

4 unit(s)

Continuing experience in an advanced nursing practice role focusing on academic / educational theories, models, concepts and strategies relevant to teaching and learning in nursing education and healthcare system. Experience in implementing the educator role with diverse learners and settings.

Lecture 2 hours/Clinical 6 hours.

Prerequisite(s): NURS 200 or NURS 202, NURS 214.

Grading: Letter Graded

NURS 248 - Advanced Health Assessment

3 unit(s)

This advanced assessment course focuses on differentiation between normal and pathologic changes experienced in a primary care practice. Using systems theory framework, students formulate appropriate diagnoses using pertinent symptomatology and etiologies. May be repeated, but not in the same semester.

Prerequisite(s): NURS 200, NURS 202, NURS 104 (or equivalent).

Grading: Letter Graded

NURS 250 - Family Nurse Practitioner Concepts and Theory I

2 unit(s)

Theory and evidence base for primary prevention, health maintenance, health promotion, health screening, health teaching and anticipatory guidance for nurse practitioners with an emphasis on case management techniques and interdisciplinary care. Emphasis on using algorithms and standardized procedures to effect primary prevention

Prerequisite(s): NURS 248, NURS 259, NURS 260

Corequisite(s): NURS 253.

Grading: Letter Graded

NURS 251 - Family Nurse Practitioner (FNP) Concepts and Theory II

2 unit(s)

Theoretical basis of secondary prevention in primary care settings. Theory and evidence to assess and manage acute, self-limiting conditions. Use and development of algorithms and protocols for secondary prevention. Emphasis on use of pharmacologic therapeutic regimens with emphasis on secondary prevention.

Prerequisite(s): NURS 248, NURS 259, NURS 250, NURS 260

Corequisite(s): NURS 254

Grading: Letter Graded

NURS 252A - Family Nurse Practitioner (FNP) Concepts and Theory III

2 unit(s)

Theoretical and evidence base for tertiary prevention for families in primary care settings. Assessment and management of chronic conditions. Development of protocols for tertiary prevention. Integration of knowledge related to primary, secondary, and tertiary prevention.

Prerequisite(s): NURS 248, NURS 259, NURS 250, NURS 251, NURS 260

Corequisite(s): NURS 256

Grading: Letter Graded

NURS 253 - Family Nurse Practitioner Practicum I

2 unit(s)

First clinical practicum increases nurse practitioner competence in the domain of management of patient health/illness status in the areas of health promotion, health protection, disease prevention and management of patient illness; using evidence based clinical practice guidelines.

Misc/Lab: Laboratory 5 hours

Course may be repeated for credit for up to 4 units.

Prerequisite(s): NURS 259, NURS 260, NURS 248

Corequisite(s): NURS 250

Grading: Credit/No Credit

NURS 253ITL - International Family Nurse Practitioner Practicum I

2 unit(s)

Using evidence-based clinical practice guidelines, this first clinical practicum in an international location increases nurse practitioner competence in the domain of management of patient health/illness via health promotion, health protection, disease prevention, and management of patient illness.

Laboratory 4 hours.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): NURS 259, NURS 260, and NURS 248.

Corequisite(s): NURS 250.

Grading: Credit/No Credit

NURS 254 - Family Nurse Practitioner Practicum II

5 unit(s)

Second clinical practicum increases nurse practitioner competence in the domain of management of patient health/illness status in the areas of health promotion, health protection, disease prevention and management of patient illness; using evidence based clinical practice guidelines

Misc/Lab: Lecture 5 hours/Supervision 1.5 hours

Prerequisite(s): NURS 259, NURS 260, NURS 248, NURS 250

Corequisite(s): NURS 251

Grading: Credit/No Credit

NURS 256 - Family Nurse Practitioner Practicum III

5 unit(s)

Final clinical practicum increases nurse practitioner competence in the domain of management of patient health/illness status in the areas of health promotion, health protection, disease prevention and management of complex or chronic patient illness; using evidence based clinical practice guidelines.

Misc/Lab: Lecture 5 hours/Supervision 1.5 hours

Prerequisite(s): NURS 259, NURS 260, NURS 248, NURS 250, NURS 251, NURS 253, NURS 254

Grading: Credit/No Credit

NURS 258 - Professional Issues for Nurse Practitioners

2 unit(s)

Exploration of the current healthcare environment as it pertains to policy development, health planning, and

economic management at the national, state, and local levels. Exploration of equitable distribution of existing resources, policy development, program evaluation, and client/population outcomes.

Pre/Corequisite(s): NURS 250 and NURS 253.

Grading: Letter Graded

NURS 259 - Advanced Clinical Pharmacology

3 unit(s)

This course is designed to prepare family nurse practitioners and nurse educators to accurately describe, administer, and counsel patients regarding appropriate and safe medication regimens. Basic pharmacologic principles and the pharmacologic actions of the major drug classes will be discussed in relation to physiologic systems, with emphasis on the application of these agents.

Grading: Letter Graded

NURS 260 - Advanced Physiology and Pathophysiology for Advanced Practice Nursing

3 unit(s)

Advanced physiology and compensatory mechanisms are examined with emphasis on system interaction, homeostasis, and pathophysiology. Focus for this course is on physiologic processes with clinical application to individuals across the lifespan. Course has both online and in-class components.

Prerequisite(s): Graduate status or instructor consent.

Grading: Letter Graded

NURS 295A - Research Methods

3 unit(s)

This course provides basic principles of research. Novice researchers are familiarized with research methodology. Candidates engage in evaluating public research, and develop and write a feasible proposal for implementation as a research project.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): NURS 200

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

NURS 297 - Master's Project

1-4 unit(s)

Project option is an alternative to thesis option. Students integrate learning from graduate courses and clinical practice by developing a project proposal, implementing and reporting the project in the form of a publishable paper. May not be repeated in the same semester.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): NURS 295A and advancement to candidacy.

Grading: Mandatory Credit/No Credit/RP

NURS 299 - Master's Thesis

1-4 unit(s)

Research proposal developed, research completed and study reported in approved thesis format during three semesters.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit/RP.

NURS 550 - Doctor of Nursing Practice Foundations for Academic Administration

2 unit(s)

Core elements of academic administration in nursing will be introduced to advanced practice nurses. The course is developed around four concepts: dimensions of the nursing academic administrator role, management aspects of the role, leadership aspects of the role, and cultivating individual leadership.

Prerequisite(s): NURS 583.

Grading: Letter Graded

NURS 574 - The Role of Diversity and Social Issues in Healthcare

2 unit(s)

Analysis of social and cultural factors affecting health among populations defined by age, education, gender, ethnicity, culture, religion, occupation, income, mental or physical disability and language.

Prerequisite(s): Admission to DNP program.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

NURS 575 - Application of Theories in Advanced Nursing Practice

2 unit(s)

Application of theories of nursing, ethics, and teaching-learning to advanced nursing practice and healthcare leadership.

Prerequisite(s): Admission to DNP program.

Grading: Letter Graded

NURS 576 - Application of Biostatistics to Populations

3 unit(s)

Examination of methods to generate and analyze biostatistical data to design, implement, and evaluate programs and policies for the healthcare of populations.

Prerequisite(s): NURS 574, NURS 575, and NURS 583.

Grading: Letter Graded

NURS 580 - DNP Practicum

6 unit(s)

Integration of clinical practice, theory, and research. Development of clinical expertise in management of health problems in selected populations.

Course may be repeated 4 times for up to 24 units.

Grading: Credit/No Credit

NURS 583 - Leadership and Professional Responsibility in Complex Healthcare Systems

2 unit(s)

Analysis of nursing leadership and evidence-based management theories necessary for the leadership of complex healthcare systems. Application of concepts of leadership, management, planning, and evaluation of population based efforts to provide quality affordable care. Analysis of professional roles and responsibilities.

Prerequisite(s): Admission to DNP program.

Grading: Letter Graded

NURS 584 - Technology, Informatics, and Data Management in the Transformation of Healthcare

2 unit(s)

Overview of patient-centered technology and clinical information systems. Application of nursing informatics in healthcare systems. Use of technology in evaluation of clinical outcomes to improve the healthcare system and to evaluate the effectiveness, quality, and efficiency of healthcare programs.

Prerequisite(s): NURS 576, NURS 585, and NURS 587.

Grading: Letter Graded

NURS 585 - Foundations of Evidence-Based Practice

3 unit(s)

Exploration of issues related to evidence-based practice. Development of skills needed to identify, critically appraise, and utilize best evidence.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): NURS 574, NURS 575, and NURS 583.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this doctoral program.

NURS 586 - Transformation of Health Care Systems: Health Policy and Economics

2 unit(s)

Healthcare policies and economics and the political forces that shape them. Role of the DNP in the analysis, formulation, and implementation of healthcare policies.

Prerequisite(s): NURS 591, NURS 592, and NURS 595B.

Grading: Letter Graded

NURS 587 - Principles of Epidemiology

3 unit(s)

Principles and concepts of epidemiology. Distribution and determinants of disease risk in populations across the lifespan. Approach to disease and intervention, identification of cause of disease, response to disease outbreak, disease surveillance, evaluation of screening and prevention, and ethical issues.

Prerequisite(s): NURS 574, NURS 575, and NURS 583.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

NURS 591 - Instructional Design and Curriculum Development

3 unit(s)

Exploration of philosophical foundations of curriculum, curriculum design, and the development of curriculum frameworks, outcomes, and competencies. Analysis of determinants of learning and the developmental stages of the learning process. Theoretical foundations of teaching-learning emphasizing critical thinking and active learning.

Prerequisite(s): NURS 584, NURS 593, and NURS 595A.

Grading: Letter Graded

NURS 592 - Outcomes Evaluation in Practice and Education

3 unit(s)

Focuses on assessment, measurement, and evaluation of learning and program outcomes in nursing. Explores theories of educational measurement and evaluation and of measures to evaluate teaching effectiveness, student learning, student outcomes, and student clinical performance.

Prerequisite(s): NURS 584, NURS 593, and NURS 595A.

Grading: Letter Graded

NURS 593 - Project Management and Finance

2 unit(s)

Principles of health care economics, third-party reimbursement, costing, budgets and budgeting, variance, economic evaluation methods, and writing a business plan to defend or market a health care program. Management of a successful project or practice emphasizing fiscal planning and control.

Prerequisite(s): NURS 576, NURS 585, and NURS 587.

Grading: Letter Graded

NURS 594 - Application of Evidence-Based Teaching in Nursing

2 unit(s)

Guided experience with a master teacher in nursing. Experiential classroom, clinical, and simulation teaching. Implementation of a teaching unit using principles of evidence-based teaching.

Lecture 1 hour/Lab 2 hours.

Prerequisite(s): NURS 591, NURS 592, and NURS 595B.

Grading: Letter Graded

NURS 595A - Translating Evidence into Reflective Practice I

2 unit(s)

Integration of clinical practice, theory, and research. Development of clinical expertise in management of health problems in selected populations. Identification and development of a project proposal for implementation. Formal defense of proposal and IRB approval, as required.

Prerequisite(s): NURS 576, NURS 585, and NURS 587.

Grading: Letter Graded

NURS 595B - Translating Evidence into Reflective Practice II

2 unit(s)

Integration of clinical practice, theory, and research. Development of clinical expertise in management of health problems in selected populations. Implementation of project proposal.

Prerequisite(s): NURS 584, NURS 593, and NURS 595A.

Grading: Letter Graded

NURS 595C - Translating Evidence into Reflective Practice III Doctoral Project

2 unit(s)

Evaluation of data and completion of doctoral project. Dissemination of results through an oral defense and manuscript submission to a peer-reviewed journal.

Prerequisite(s): NURS 591, NURS 592, and NURS 595B.

Grading: Mandatory Credit/No Credit/RP

Nutrition and Food Science

NUFS 1A - Physical Science of Food

3 unit(s)

Introductory course to the physical, chemical and sensory properties of food for students not majoring in the sciences. Basic structure, function and organization of foods, laws of thermodynamics, systems of

classification, as well as the interactions of energy and matter.

Satisfies B1: Physical Science.

Grading: Letter Graded

NUFS 8 - Nutrition for the Health Professions

3 unit(s)

Nutrients and their functions; recommended nutrient intakes and evaluation of dietary adequacy; relationship of nutrition to optimum health and dietary changes in disease. For nutritional science, nursing and other health profession majors.

Prerequisite(s): CHEM 1A or CHEM 30A (with a grade of 'C' or better), or instructor consent.

Grading: Letter Graded

NUFS 9 - Introduction to Human Nutrition

3 unit(s)

Principles and methodology of nutritional science; standards of nutrient intake; physiological functions and chemical classification of nutrients; nutrient needs throughout the lifespan; relationship between diet and disease; scientific, social, and psychological issues.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Note(s): Not open to majors.

NUFS 10 - Basic Life Skills

3 unit(s)

Introduction to basic nutrition and culinary concepts for selecting and preparing healthy, budget-friendly foods to establish healthy eating habits for independent living. Emphasis on self-care, wellness, and development of personal resource management skills to foster academic, professional, and personal growth.

Lecture 2 hours/Activity 2 hours.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

NUFS 12 - Data Analytics in Restaurant Operations

3 unit(s)

A comprehensive exploration of the essential aspects of restaurant data, including sales trends, customer behavior, operational efficiency, marketing impact, financial management, employee performance, and menu optimization.

Grading: Letter Graded.

Cross-listed with HSPM 12. Hospitality Management is responsible for scheduling.

NUFS 16 - Science, Physiology, and Nutrition

3 unit(s)

Introduction to life sciences, from chemistry to cellular and physiologic functions, with nutrition as an underlying theme. Interactions with environment, including effect of culture, genetics, and nutrition on susceptibility to disease. Applications of biotechnology in the life sciences.

Satisfies B2: Life Science.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

NUFS 20 - Sanitation and Environmental Issues in the Hospitality Industry

2 unit(s)

Sanitation in food service, hotel and travel/tourism industries; study of pathogenic organisms and food handling procedures. Occupational health, safety and environmental control in the hospitality industry.

Grading: Letter Graded

Cross-listed with HSPM 20. Nutrition, Food Science and Packaging is responsible for scheduling.

Sustainability Related - SDG 8: Decent Work and Economic Growth

NUFS 21 - Culinary Principles and Practice

3 unit(s)

Introduction to principles of food and beverage production and techniques. Emphasis on quality and culinary standards.

Lecture 2 hours/Lab 3 hours.

Grading: Letter Graded.

NUFS 22 - Catering and Beverage Management

3 unit(s)

Planning and executing catering and buffet functions. Evaluation of alcoholic and non-alcoholic beverages regarding purchasing, storage, preparation, merchandising and regulations.

Misc/Lab: Lecture 2 hours /lab 3 hours.

Prerequisite(s): NUFS 20 or instructor consent.

Grading: Letter Graded

Cross-listed with HSPM 22. Nutrition, Food Science and Packaging is responsible for scheduling.

NUFS 25 - Internship in Foodservice Management

1-2 unit(s)

Approved professional broad-based work experience in foodservice management industry for total of 200 hours. Written report due at completion. A maximum of 2 units may be repeated.

Course may be repeated for credit for up to 2 units.

Prerequisite(s): NUFS 20 and instructor consent.

Grading: Credit/No Credit

NUFS 31 - Professionalism in Nutrition, Food Science and Packaging

1 unit(s)

Professional roles, skills and opportunities in the fields of dietetics, foodservice, food science, and packaging.

Grading: Letter Graded

NUFS 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

NUFS 100W - Writing Workshop

3 unit(s)

Development of skills in scientific and technical writing. How to write a critical review of published writing, a business letter, a scholarly paper, and give an oral presentation.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Allowed Declared Majors: Nursing and pre-Nursing, Occupational Therapy, Public Health, Recreation, Communicative Disorders and Sciences, Nutritional Science, Special Majors, and Individual Studies. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

NUFS 101A - Food Science

4 unit(s)

Experimental study of food and introduction to scientific methods used in food evaluation; functions of ingredients in prepared foods.

Misc/Lab: Lecture 3 hours/Lab 3 hours

Prerequisite(s): CHEM 30B or CHEM 8. College basic food preparation course or instructor consent.

Grading: Letter Graded

NUFS 103 - Food Processing and Packaging I

2 unit(s)

Principles and methods of food preservation/processing and packaging operations. Raw materials handling, effect of processing on nutritional value of foods, packaging and food additives. Recommended: College basic food preparation course.

Misc/Lab: Lecture/lab 5 hours.

Prerequisite(s): CHEM 30B or CHEM 8 or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

NUFS 103L - Food Processing Laboratory

1 unit(s)

Laboratory activities associated with the principles and methods of food preservation/processing and packaging operations; raw materials handling, effect of processing on nutritional value of foods, packaging and food additives.

Prerequisite(s): CHEM 30B or CHEM 8; instructor consent

Grading: Letter Graded

NUFS 104A - Cultural Aspects of Food

3 unit(s)

Regional, ethnic and religious influences on food culture. Activity with foods of several cultures.

Misc/Lab: Lecture/activity 4 hours.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

NUFS 105 - Current Issues in Nutrition

3 unit(s)

Controversial topics, including the relation of nutrition to cancer, coronary heart disease, hypertension, diabetes, eating disorders, osteoporosis and athletic performance; recommended nutrient intakes; and other current issues.

Prerequisite(s): NUFFS 8, NUFFS 9, NUFFS 163 or equivalent introductory course in human nutrition.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

NUFS 106A - Human Nutrition in the Life Span

3 unit(s)

Integrates chemical, biological and social sciences into a comprehensive concept of human nutrition. Emphasis on assessing nutrient status; planning and intervention throughout the life cycle.

Prerequisite(s): NUFS 8 (with a grade of 'C' or better) or passing grade on a challenge exam.

Corequisite(s): NUFS 100W / PH 100W and NUFS 31.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

NUFS 106B - Research Methodology in Nutrition and Food Science

3 unit(s)

Introduction to research methodology, interpretation and data analysis with a focus on developing strong information literacy skills, as well as critical thinking, reading, and writing skills in refining scholarly writing in the style of the discipline.

Prerequisite(s): STAT 95 or PH 67.

Corequisite(s): NUFS 106A and NUFS 100W / PH 100W.

Grading: Letter Graded

NUFS 108A - Nutrition and Metabolism

3 unit(s)

Chemical and physiological studies of carbohydrate, protein, lipid, vitamin and mineral metabolism. Application to the normal nutrition of human beings.

Prerequisite(s): NUFS 106A, BIOL 66, CHEM 132 (both with a grade of 'C' or better); and NUFS 100W / PH 100W.

Grading: Letter Graded

NUFS 108L - Nutrition Laboratory

1 unit(s)

Chemical and biochemical analysis of nutrients and metabolites in body fluids for the assessment of nutritional status of humans.

Lab 3 hours.

Prerequisite(s): CHEM 132L; STAT 95 or BUS2 90 or PH 167.

Corequisite(s): NUFS 108A.

Grading: Letter Graded

NUFS 109 - Advanced Nutrition

3 unit(s)

Advanced studies of vitamins and minerals. Evaluation and interpretation of nutritional research methodology and findings.

Prerequisite(s): NUFS 106A; CHEM 132 (with grades of 'C' or better in each); NUFS 100W / PH 100W; and BIOL 66; BUS2 90, STAT 95 or PH 167.

Grading: Letter Graded

NUFS 110A - Medical Nutrition Therapy

3 unit(s)

Application of nutritional principles and dietary intake to meet the needs of various pathological conditions.

Misc/Lab: Lecture/activity 4 hours.

Prerequisite(s): NUFS 108A (with grade of 'C' or better).

Corequisite(s): NUFS 109.

Grading: Letter Graded

NUFS 110B - Medical Nutrition Therapy

3 unit(s)

Application of nutritional principles and dietary intake to meet the needs of various pathological conditions.

Misc/Lab: Lecture/activity 4 hours.

Prerequisite(s): NUFS 110A and NUFS 109 (with a grade of C or better in each).

Grading: Letter Graded

NUFS 111 - Foodservice Production Management

3 unit(s)

Principles and procedures for menu planning, production scheduling, volume food production, operation of foodservice equipment, sanitation control and formula costing.

Misc/Lab: Lecture 2 hours/Lab 3 hours

Prerequisite(s): NUFS 101A or HSPM 11; NUFS 8 or NUFS 9; or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

NUFS 113 - Foodservice Systems: Mgmt & Proc

3 unit(s)

Selection and purchasing in foodservice operations: food and equipment and writing food/equipment specifications. Allocation and management of resources in foodservice systems: materials (food and supplies), facilities (equipment and space), human (management and employee labor), operational (time and money).

Misc/Lab: Lecture/lab 5 hours.

Prerequisite(s): NUFS 111 or instructor consent.

Grading: Letter Graded

NUFS 114A - Community Nutrition for Majors

3 unit(s)

Nutrition problems; public policy, advocacy and legislation; government programs; needs assessments; management of community services.

Prerequisite(s): NUFS 106A, senior standing, and instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 2: Zero Hunger

NUFS 114B - Community Nutrition (non-majors)

3 unit(s)

Key nutrition concepts and terms; age appropriate nutritional interventions; nutrition and public policy, advocacy and legislation; government programs and provision of community nutrition services.

Satisfies SJSU Studies Area S. Self, Society & Equality in the U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Sustainability Related - SDG 2: Zero Hunger

NUFS 115 - Issues in Food Toxicology

3 unit(s)

Introduction to toxicology of foods, and food-borne chemicals and organisms. Scientific basis for determining biological and environmental safety of the food supply from food development, growth and production through harvesting, processing, storage and eventual consumption.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

NUFS 116 - Aging and Nutrition

3 unit(s)

The aging process, physiological changes, dietary requirements, diseases, environmental factors, housing, economic status, handicaps, personal relations and current programs for the aged.

Prerequisite(s): One college nutrition course or instructor consent.

Grading: Letter Graded

Cross-listed with GERO 116. Nutrition, Food Science and Packaging is responsible for scheduling.
Sustainability Focused - SDG 10: Reduced Inequalities

NUFS 117 - Food Evaluation Techniques

3 unit(s)

Food evaluation techniques used to evaluate the appearance, aroma, flavor, texture and acceptability of foods. Relationships between sensory and instrumental measurements of color and texture. Work independently and cooperatively to identify sensory evaluation objectives, write hypotheses, design and conduct experiments, and analyze and interpret data. Intended for majors.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): NUFS 8 and NUFS 101A; CHEM 30A, CHEM 30B, CHEM 1A; or instructor consent.

Grading: Letter Graded.

NUFS 118 - Food Chemistry

3 unit(s)

Important classes of food constituents, their nature, occurrence, chemical and biochemical significance, and the changes they undergo during food preservation and processing.

Misc/Lab: Lecture/lab 5 hours.

Prerequisite(s): NUFS 101A and/or NUFS 103; CHEM 30B or CHEM 8; or Instructor Consent

Grading: Letter Graded

NUFS 122 - Chemical Analysis of Food

3 unit(s)

Techniques in chemical analysis of nutrients and other components of food. Planning, conducting and evaluating a scientific experiment and presenting the data in technical written form.

2 hours lecture/3 hours lab.

Prerequisite(s): NUFS 103 or NUFS 101A, NUFS 100W / PH 100W, STAT 95 or PH 67.

Grading: Letter Graded

NUFS 123 - Nutrition for Sport

3 unit(s)

Planning optimum diets for performance and health; metabolism and energy systems; roles of nutrients in physical performance; efficacy of ergogenic nutrition aids.

Prerequisite(s): NUFS 8 or NUFS 9.

Grading: Letter Graded

NUFS 124 - Disordered Eating and Nutrition Therapy

3 unit(s)

Metabolic, physiological, and psychological determinants and effects of disordered dietary behaviors.

Disorders in regulation of food intake, case studies, and different intervention approaches explored. Screening and treatment of disordered eating in athletes emphasized. Opportunities provided to develop counseling strategies.

Prerequisite(s): NUFS 8.

Grading: Letter Graded

NUFS 125 - Child Nutrition Program Administration

2 unit(s)

Study of the components of model child nutrition programs through application of current child health and nutrition principles, education practices, marketing procedures, communication strategies, computer-based nutrient and business analysis and operations management skills.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Note(s): Offered Summer only.

NUFS 134 - Multicultural Complementary and Alternative Medicine

3 unit(s)

Explores complementary and alternative medicine (CAM) in the U.S., emphasizing its evidence-based efficacy and ties to cultural, racial, and individual identities. Dives into the historical and societal influences on CAM, understanding its role in shaping health equity and U.S. healthcare dynamics. Through discussions, writings, and community engagement, students will champion inclusive health practices in a multicultural setting.

Satisfies SJSU Studies Area S - Self, Society & Equality in the U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Students are strongly encouraged to satisfy GE Areas R, S, and V with courses from departments other than the major department. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

NUFS 135 - Health Issues in a Multicultural Society

3 unit(s)

A multidisciplinary interpretation and evaluation of consumer health issues. Impact of cultural variables (including communication methods, socioeconomic status, and traditional beliefs) on health and illness. Interaction of individuals in families and other groups.

Satisfies SJSU Studies Area S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with PH 135. Public Health is responsible for scheduling.

Sustainability Focused - SDG 3: Good Health and Well-Being

NUFS 139 - Hunger and Environmental Nutrition

3 unit(s)

Physiology of hunger/malnutrition on human development and health; political, social, cultural and gender factors that contribute to world hunger; scientific/technological foundation to population research and food production and their effect on the environment.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

NUFS 139ITL - Hunger and Environmental Nutrition

3 unit(s)

The physiology of hunger/malnutrition on human development and health; political, social, cultural, and gender factors that contribute to world hunger; scientific/technological foundations of population research and food production and their effect on the environment.

Satisfies SJSU Studies R: Earth & Environment

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Note(s): All of SJSU Studies courses require upper division standing.

Sustainability Focused - SDG 3: Good Health and Well-Being

NUFS 144 - Food Culture: Consuming Passions

3 unit(s)

Cultural aspects of food as related to regional, ethnic and religious influences. Issue based examination of effects of food behavior on culture, society, health, and economics.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

NUFS 144ITL - Food Culture: Consuming Passions: International Experience

3 unit(s)

Cultural aspects of food as related to regional, ethnic, and religious influences abroad. Issue-based examination of the effects of food behavior on culture, society, health, and economics abroad. Involves an international, study abroad experience.

Satisfies SJSU Studies V: Culture, Civil & Global Understanding

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 2: Zero Hunger

NUFS 150 - Food and Nutritional Toxicology

2 unit(s)

Major classes of food toxicants, their importance, properties, detection, metabolism, control and regulation; and basic issues in food/diet safety and toxicology.

Prerequisite(s): NUFS 103, CHEM 30B or CHEM 8; introductory courses in nutrition and biology and instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

NUFS 151 - Food Microbiology

2 unit(s)

Role of microorganisms in foodborne illness, food quality, spoilage, and preservation. Control of microorganisms in foods. Methods to enumerate, identify, and characterize microorganisms in foods.

Prerequisite(s): MICR 101

Grading: Letter Graded

NUFS 163 - Science of Physical Fitness and Nutrition

3 unit(s)

Use of scientific principles, scientific investigation, and current technological advances to assess the relationship between diet, physical fitness, and disease. Examine scientific literature to evaluate the effects of nutritional intervention on exercise performance.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

Cross-listed with KIN 163 Nutrition, Food Science and Packaging is responsible for scheduling.

NUFS 180 - Individual Studies

1-6 unit(s)

Individual work for majors or minors on special topics by arrangement.

Prerequisite(s): NUFS 8; instructor and department chair consent during semester prior to enrollment.

Grading: Credit/No Credit

NUFS 190 - Nutrition Education and Counseling

3 unit(s)

Education principles and behavior change theories; counseling and communication techniques for nutritionists and dietitians working with individuals and groups.

Prerequisite(s): NUFS 106A or Instructor Consent

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

NUFS 192 - Field Experience in Nutrition and Food Science and Packaging Technology

1-6 unit(s)

Practical application of academic principles in nutrition, food science, packaging, dietetics food management, nutrition education, and/or sports nutrition. Repeatable for a maximum of 6 units.

Misc/Lab: Supervision 3 to 18 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Senior standing in NUFS; instructor consent by end of prior semester.

Grading: Credit/No Credit

NUFS 192I - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

NUFS 194 - Entrepreneurial Nutrition

1 unit(s)

Introduction to entrepreneurial nutrition including professional roles, skills and opportunities.

Prerequisite(s): ENGL 1A or instructor consent.

Grading: Letter Graded

NUFS 201 - Colloquium in Nutrition, Food Science and Packaging

3 unit(s)

Presentation and discussion of original research or specialized studies in Nutrition, Food Science and Packaging by graduate students, faculty & guest speakers.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

NUFS 217 - Issues in Nutrition, Food and Packaging

3 unit(s)

Discussion and critical evaluation of advanced topics in nutritional science, food science and technology, foodservice management, and packaging.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Repeatable for credit.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

NUFS 219A - Advanced Nutrition and Metabolism

3 unit(s)

Advanced seminar course in human nutrition and metabolism that covers sources and interactions among dietary constituents, digestion and absorption, transport, processing storage, and catabolism and excretion as well as the regulation of metabolic homeostasis in normal healthy individuals.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): NUFs 108A & NUFs 109 or equivalent advance courses in Human nutrition and Metabolism, CHEM 132 or equivalent, BIOL 66 or equivalent, advanced course in statistics or biostatistics, or Consent of Instructor.

Grading: Letter Graded

NUFS 219B - Seminar in Advanced Topics in Human Nutrition & Dietetics

3 unit(s)

Advanced seminar on selected topics in human nutrition and dietetics such as: sources and interactions among dietary constituents, nutrition and disease, community nutrition, nutrition education, hunger and environmental nutrition, sustainability, nutrition and culture, and issues of social justice.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Instructor Consent

Grading: Letter Graded

NUFS 220A - Advanced Medical Nutrition Therapy

3 unit(s)

Assessment and evaluation of nutritional status; diet planning in health and disease; counseling techniques; and medical documentation.

Prerequisite(s): NUFS 110A and NUFS 110B (each with a grade of "C" or better).

Grading: Letter Graded

NUFS 242 - Advanced Foodservice/Restaurant Management

3 unit(s)

Quantitative and qualitative analyses of foodservice/restaurant operations as bases for managerial decision-making.

Misc/Lab: Lecture 3 hours.

Prerequisite(s): NUFS 113.

Grading: Letter Graded

NUFS 243 - Nutrition and Dietetics Leadership

3 unit(s)

Leadership as dietitian and nutrition-related manager in a variety of settings. Quantitative and qualitative analyses of leadership strategies including communication, emotional intelligence and quality improvement.

Grading: Letter Graded

NUFS 257 - Biostatistics in Research

3 unit(s)

Concepts in biostatistics including best practices and skills for managing, analyzing, and interpreting research data within the health profession fields.

Prerequisite(s): An undergraduate statistics course.

Grading: Letter Graded

NUFS 260 - Multidisciplinary Health Promotion in Later Life

3 unit(s)

Multidisciplinary assessment and planning. Principles of promoting health and preventing disability in later life. Physical, psychological, social, cultural, spiritual, and environmental factors that affect length and quality of life.

Prerequisite(s): BIOL 66 or GERO 108 or instructor consent.

Grading: Letter Graded

Cross-listed with GERO 260 / HPRF 260. Nutrition, Food Science and Packaging is responsible for scheduling.

Sustainability Related - SDG 3: Good Health and Well-Being

NUFS 280A - Dietetic Internship

1-12 unit(s)

Supervised professional field experience to fulfill ADA eligibility requirements for registered dietitian examination.

Prerequisite(s): DPD or instructor consent.

Grading: Credit/No Credit

Note(s): Course can be taken for 1, 3, 6, 9 or 12 units.

NUFS 295A - Research Methodology

3 unit(s)

Introduction to scientific methodology, and research design; including refining scholarly search strategies to build a strong scientific base for research, development of research design, data collection, analysis, interpretation and application of research in nutrition, food science and packaging.

Grading: Letter Graded

NUFS 298 - Special Studies in Nutrition, Food Science and Packaging

1-6 unit(s)

Advanced individual research and projects.

Prerequisite(s): Consent of graduate advisor.

Grading: Mandatory Credit/No Credit/RP

NUFS 299 - Master's Thesis

1-6 unit(s)

Prerequisite(s): Advancement to candidacy for the master's degree.

Grading: Mandatory Credit/No Credit/RP

NUFS 1290R - Culminating Experience Supervision

1 unit(s)

This course satisfies the requirement that all graduate students must remain enrolled during semesters in which they are working solely on their theses or projects, for which they have previously received but not cleared an RP grade.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Existing RP grade in a graduate-level thesis or project course

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Occupational Therapy

OCTH 190 - Foundations of Neuroscience for Occupational Therapy

3 unit(s)

Foundations of neuroscience related to occupational performance. Topics include an overview of anatomy and physiology of the human nervous system and the interaction among the central, peripheral and autonomic nervous systems related to function.

Prerequisite(s): BIOL 65 or BIOL 65O, BIOL 66

Grading: Letter Graded

OCTH 192I - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 12 units.

Grading: Mixed Grading

OCTH 201A - Field Work Experience

3-6 unit(s)

Three months in full-time fieldwork is required to complete this course. Completion of this course is required for Master of Science in Occupational Therapy degree.

Course is repeatable 3 times for up to 9 units.

Prerequisite(s): OCTH 276 and OCTH 286. Open to Masters students only.

Grading: Credit/No Credit.

Note(s): Travel to facility is the student's responsibility.

OCTH 201AD - Field Work Experience

3-6 unit(s)

Three months in full-time fieldwork is required to complete this course. Completion of this course is required for the Occupational Therapy Doctorate degree.

Course is repeatable 3 times for up to 9 units.

Prerequisite(s): OCTH 276 and OCTH 286. Open to Doctoral students only.

Grading: Credit/No Credit.

Note(s): Travel to facility is the student's responsibility.

OCTH 201B - Advanced Field Work Experience

3-6 unit(s)

Three months in full-time fieldwork is required to complete this course. Completion of this course is required for the Master of Science in Occupational Therapy degree.

Course is repeatable 3 times for up to 9 units.

Prerequisite(s): OCTH 276 and OCTH 286.. Open to Masters students only.

Grading: Credit/No Credit.

Note(s): Travel to facility is the student's responsibility.

OCTH 201BD - Advanced Field Work Experience

3-6 unit(s)

Three months in full-time fieldwork is required to complete this course. Completion of this course is required for the Occupational Therapy Doctorate degree.

Course is repeatable 3 times for up to 9 units.

Prerequisite(s): OCTH 276 and OCTH 286. Open to Doctoral students only.

Grading: Credit/No Credit.

Note(s): Travel to facility is the student's responsibility.

OCTH 205 - Mindfulness of Self in Daily Life

3 unit(s)

Mindfulness-based exploration of self in personal life. Focus on personal mindfulness practice informed by the study of the foundations of mindfulness, self-compassion, and interpersonal mindfulness practice which forms the basis for integrating and sustaining mindfulness in daily life.

Prerequisite(s): MBSR program.

Grading: Letter Graded

OCTH 206 - Clinical Practice Skills for Occupational Therapy

3 unit(s)

Introduces foundational clinical practice skills used in occupational therapy intervention (e.g., adaptive equipment, assistive technology, functional mobility, wheelchair fitting and mobility, adapted driving, community mobility) using experiential, kinesthetic learning and case-based scenarios.

Prerequisite(s): Open to Masters students only.

Grading: Letter Graded.

OCTH 206D - Clinical Practice Skills for Occupational Therapy

3 unit(s)

Introduces foundational clinical practice skills used in occupational therapy intervention (e.g., adaptive equipment, assistive technology, functional mobility, wheelchair fitting and mobility, adapted driving, community mobility) using experiential, kinesthetic learning and case-based scenarios.

Prerequisite(s): Open to Doctoral students only.

Grading: Letter Graded.

OCTH 207 - Mindfulness and Quality of Participation in Daily Occupations

2 unit(s)

Explore links among quality of participation in daily life, inter-occupational relationship patterns, level of attention, intention, and attitudes we bring to healthcare and human services practice. Examine relationships of automatic patterns of engagement on health and wellbeing. Implement mindfulness-based approaches into inter-occupational relationships.

Prerequisite(s): OCTH 205.

Grading: Letter Graded

OCTH 210 - Seminar in Occupational Therapy

2-3 unit(s)

Seminar on special topics in occupational therapy. Students will develop knowledge and skills in a selected practice area.

Prerequisite(s): Open to Masters students only.

Grading: Letter Graded.

OCTH 210D - Seminar in Occupational Therapy

2-3 unit(s)

Seminar on special topics in occupational therapy. Students will develop knowledge and skills in a selected practice area.

Prerequisite(s): Open to Doctoral students only.

Grading: Letter Graded.

OCTH 210ITL - Seminar in Occupational Therapy: International Experience

2-3 unit(s)

Gain cross-cultural and -national insight into political, social, cultural, economic factors that influence occupational therapy services outside of the U.S, define the role of occupational therapy and therapists as global citizens, engage local people in its services, explore social, occupational justice issues.

Prerequisite(s): Open to Masters students only.

Grading: Letter Graded.

OCTH 210ITLD - Seminar in Occupational Therapy: International Experience

2-3 unit(s)

Gain cross-cultural and -national insight into political, social, cultural, economic factors that influence occupational therapy services outside of the U.S, define the role of occupational therapy and therapists as global citizens, engage local people in its services, explore social, occupational justice issues.

Prerequisite(s): Open to Doctoral students only.

Grading: Letter Graded.

OCTH 211 - Historical and Theoretical Foundations of Occupational Therapy

3 unit(s)

History of occupational therapy practice, evolution of the concepts and values underlying its theoretical constructs, and the leaders who shaped the profession. Development of ideas, values, and beliefs concerning occupation within the context of historical, social, and scientific advances.

Prerequisite(s): Open to Masters students only.

Grading: Letter Graded.

OCTH 211D - Historical and Theoretical Foundations of Occupational Therapy

3 unit(s)

History of occupational therapy practice, evolution of the concepts and values underlying its theoretical constructs, and the leaders who shaped the profession. Development of ideas, values, and beliefs concerning occupation within the context of historical, social, and scientific advances.

Prerequisite(s): Open to Doctoral students only.

Grading: Letter Graded.

OCTH 212 - Occupations through the Lifespan

3 unit(s)

The development of occupations, their meaning and role in human development through the lifespan, and the conditions that create barriers to engagement in meaningful occupations. Students will analyze how interactions between self and environment influence occupational participation at all ages.

Prerequisite(s): Open to Masters students only.

Grading: Letter Graded.

Sustainability Related - SDG 8: Decent Work and Economic Growth

OCTH 212D - Occupations through the Lifespan

3 unit(s)

The development of occupations, their meaning and role in human development through the lifespan, and the conditions that create barriers to engagement in meaningful occupations. Students will analyze how interactions between self and environment influence occupational participation at all ages.

Prerequisite(s): Open to Doctoral students only.

Grading: Letter Graded.

Sustainability Related - SDG 8: Decent Work and Economic Growth

OCTH 213 - Professional Development I

3 unit(s)

Introduces occupational therapy as a profession and addresses professional organizations, roles, attitudes,

behaviors, and ethics. Explores the influence of culture on worldview, communication, and health behaviors. Students engage in personal and professional self-assessment and goal setting for professional development.

Grading: Letter Graded

OCTH 216 - Evaluation in Occupational Therapy

3 unit(s)

The purpose and process of evaluation in determining need for and outcomes of intervention. Application of measurement theory, theoretical perspectives and practice models for selection, administration, and interpretation of appropriate instruments, including occupational profiles, skilled observation, interviews and standardized tests.

Grading: Letter Graded

OCTH 221 - Occupational Analysis

3 unit(s)

Course focuses on analyzing occupations and occupational performance. Meaning and significance of competence, challenge, and success in occupations are explored through engagement in selected projects. Students learn to structure, adapt, plan, teach, and assess activities for therapeutic use.

Prerequisite(s): Open to Masters students only.

Grading: Letter Graded.

OCTH 221D - Occupational Analysis

3 unit(s)

Course focuses on analyzing occupations and occupational performance. Meaning and significance of competence, challenge, and success in occupations are explored through engagement in selected projects. Students learn to structure, adapt, plan, teach, and assess activities for therapeutic use.

Prerequisite(s): Open to Doctoral students only.

Grading: Letter Graded.

OCTH 222 - Functional Kinesiology for Occupational Therapists

3 unit(s)

Study of body movements based on neurophysiological and biomechanical principles of joint and muscle action correlated with analysis of the body in motion, physiological effects of activity and adaptation to physical dysfunction.

Prerequisite(s): Open to Masters students only.

Grading: Letter Graded.

OCTH 222D - Functional Kinesiology for Occupational Therapists

3 unit(s)

Study of body movements based on neurophysiological and biomechanical principles of joint and muscle action correlated with analysis of the body in motion, physiological effects of activity and adaptation to

physical dysfunction.

Prerequisite(s): Open to Doctoral students only.

Grading: Letter Graded.

OCTH 224 - Occupational Therapy Practice in the Community I

3 unit(s)

Introduction to community focused interventions based on the social model of health and occupational justice concepts, designed to promote health, well-being, social inclusion, empowerment, and health disparity reduction for populations and communities. Focus is on emerging and non-traditional practice settings.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

OCTH 225 - Capstone Evidence-Based MBHHS Practice Project

3 unit(s)

The emphasis of evidence-based practice for Mindfulness-Based Interventions in Healthcare and Human Services is on strategies for selecting, evaluating and analyzing professional literature and engaging in critical analysis of clinical and professional decision making and crafting into a publishable quality mindfulness-based intervention program.

Prerequisite(s): OCTH 205 and OCTH 207.

Grading: Letter Graded

OCTH 226 - Occupational Therapy with Children

3 unit(s)

Occupational therapy practice for children from birth to early adolescence, focusing on integrating knowledge of theoretical frameworks, practice settings, research evidence, clinical reasoning and regulatory and reimbursement policies in the provision of interventions for conditions and disorders experienced in this age group.

Grading: Letter Graded

OCTH 233 - Professional Development II

3 unit(s)

Deeper exploration into occupational therapy leadership, supervision, ethical conduct, advocacy, program development, and management principles related to current service models. Recent legislation and its impact on occupational therapy practice will be reviewed.

Prerequisite(s): OCTH 213

Grading: Letter Graded

OCTH 234 - Occupational Therapy Practice in the Community II

3 unit(s)

Community focused seminar and practicum providing intervention in emerging and non-traditional practice settings and underserved communities. Seminars address the diverse dimensions of practice in the community related to needs assessment, the community site, program development and implementing occupational therapy services.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

OCTH 236 - Occupational Therapy with Youth

3 unit(s)

Occupational therapy practice for adolescents and young adults, focusing on integrating knowledge of theoretical frameworks, practice settings, research evidence, clinical reasoning and regulatory and reimbursement policies in the provision of interventions for conditions and disorders experienced in this age group.

Grading: Letter Graded

OCTH 245 - Introduction to Research Methods

3 unit(s)

Introduction to research methodology and the process of critical inquiry. How one conducts research, including traditions and methods used in occupational therapy and how to understand research publications.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Introductory Statistics. Open to Masters students only.

Grading: Letter Graded.

Note(s): This course satisfies graduate-level GWAR in this master's program.

OCTH 245D - Introduction to Research Methods

3 unit(s)

Introduction to research methodology and the process of critical inquiry. How one conducts research, including traditions and methods used in occupational therapy and how to understand research publications.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Introductory Statistics. Open to Doctoral students only.

Grading: Letter Graded.

Note(s): This course satisfies graduate-level GWAR in this doctoral program.

OCTH 246 - Occupational Therapy with Young Adults

3 unit(s)

Occupational therapy practice for young adults ages 25-40, focusing on integrating knowledge of theoretical

frameworks, practice settings, research evidence, clinical reasoning and regulatory and reimbursement policies in the provision of interventions for conditions and disorders experienced in this age group.

Grading: Letter Graded

OCTH 256 - Occupational Therapy with Middle Aged Adults

3 unit(s)

Occupational therapy practice for adults age 41-65, focusing on integrating knowledge of theoretical frameworks, practice settings, research evidence, clinical reasoning and regulatory and reimbursement policies in the provision of interventions for conditions and disorders experienced in this age group.

Grading: Letter Graded

OCTH 266 - Occupational Therapy with Older Adults

3 unit(s)

Focuses on older adults whose occupational participation and wellness are affected by age associated change, illness, injury, or disability. The occupational therapy process is applied to facilitate independence, remediate dysfunction, adapt to disability, and enhance wellness and quality of life.

Grading: Letter Graded

OCTH 275 - Evidence Based Practice in Occupational Therapy

3 unit(s)

Evidence based practice is explored through lecture, in-class activities and data base research. Emphasis is on strategies for selecting, evaluating and analyzing professional literature in clinical decision making and exploration of quantitative and qualitative analysis to support evaluation of literature.

Prerequisite(s): OCTH 245

Grading: Letter Graded

OCTH 276 - Practicum and Seminar 1A

3 unit(s)

Introductory practicum and seminar in occupational therapy. Students will develop beginning observation, reasoning, and documentation skills through placement at practice sites, and explore the integration of evidence and theory in the practice of occupational therapy through online and on-campus seminars.

Lecture 3 hours/Lab 3 hours.

Prerequisite(s): Open to Masters students only.

Grading: Credit/No Credit.

OCTH 276D - Practicum and Seminar 1A

3 unit(s)

Introductory practicum and seminar in occupational therapy. Students will develop beginning observation, reasoning, and documentation skills through placement at practice sites, and explore the integration of evidence and theory in the practice of occupational therapy through online and on-campus seminars.

Lecture 3 hours/Lab 3 hours.

Prerequisite(s): Open to Doctoral students only.

Grading: Credit/No Credit.

OCTH 286 - Practicum and Seminar 1B

4 unit(s)

Clinical practice in occupational therapy. Students engage in direct intervention in departmental clinics. Seminars, in-service education, direct supervision, and one to one mentoring are used to develop practice skills.

Lecture 4 hours/Supervision 3 hours.

Prerequisite(s): OCTH 276. Open to Masters students only.

Grading: Credit/No Credit.

OCTH 286D - Practicum and Seminar 1B

4 unit(s)

Clinical practice in occupational therapy. Students engage in direct intervention in departmental clinics. Seminars, in-service education, direct supervision, and one to one mentoring are used to develop practice skills.

Lecture 4 hour/Supervision 3 hours.

Prerequisite(s): OCTH 276. Open to Doctoral students only.

Grading: Credit/No Credit.

OCTH 292 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

OCTH 295 - Advanced Research Methods in Occupational Therapy

3 unit(s)

Advanced topics in research methodology and critical inquiry. Instrument development, the human subjects review process, quantitative and qualitative data analysis, interpretation and reporting of results. Critical analysis and synthesis of the gathered information crafted into a publishable quality paper and oral presentation.

Prerequisite(s): OCTH 245 and OCTH 275

Grading: Credit/No Credit

OCTH 298 - Supervised Study in Occupational Therapy

1-3 unit(s)

Special problems assigned for individual study in the occupational therapy Master's program.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): OCTH 286

Grading: Mandatory Credit/No Credit/RP

OCTH 505 - Occupational Therapy Doctorate Exploration I

1 unit(s)

Expands on the process used for critical inquiry and analysis of contemporary knowledge. Students are expected to engage in individualized inquiry in a specific topic area.

Prerequisite(s): OCTH 245D with a grade of B or better.

Grading: Letter Graded

OCTH 515 - Occupational Therapy Doctorate Exploration II

2 unit(s)

Foster the connections among occupation based models and research questions. The student will examine how models can direct the search for evidence to address the research questions.

Prerequisite(s): OCTH 505.

Grading: Letter Graded

OCTH 516 - Evaluations in Occupational Therapy

3 unit(s)

Application of measurement theory, theoretical perspectives and practice models for selection, administration, and interpretation of appropriate instruments, including occupational profiles, skilled observation, interviews and standardized tests.

Grading: Letter Graded

OCTH 524 - Occupational Therapy Practice in the Community

2 unit(s)

Community interventions based on the social model of health and occupational justice; designed to promote health, well-being, social inclusion, empowerment, and health disparity reduction for populations and communities in emerging and non-traditional settings.

Grading: Letter Graded

OCTH 525 - OTD Exploration III

3 unit(s)

Planning for the Capstone Experience and Project, completing the Institutional Review Board (IRB) application, and developing the learning objectives for the Capstone Experience and Capstone Project courses.

Prerequisite(s): OCTH 515.

Grading: Letter Graded

OCTH 526 - Occupational Therapy with Children

3 unit(s)

Occupational therapy practice for children from birth to early adolescence, focusing on integrating theoretical models, research evidence, clinical reasoning and regulatory policies in the provision of interventions for conditions and disorders in this age group.

Prerequisite(s): OCTH 222D.

Grading: Letter Graded

OCTH 533 - Professional Development - Leadership

3 unit(s)

The course explores occupational therapy leadership theories, advocacy, healthcare policy and legislation, mentorship, utilizing inclusive approaches within diverse and multi-cultural contexts of health care and professional organizations, using multi-frame thinking and organizational development change theory.

Grading: Letter Graded

OCTH 534 - Community and Population Health

3 unit(s)

Explores the occupational therapy role in community health promotion through advocacy, policy and legislation, program development, and grant writing. Uses inclusive approaches with stakeholders from diverse and multicultural contexts including health care, community, and professional organizations.

Grading: Letter Graded

OCTH 536 - Occupational Therapy with Youth

3 unit(s)

Occupational therapy practice for adolescents and young adults, focusing on integrating knowledge of theoretical models, research evidence, clinical reasoning and regulatory policies to provide interventions for conditions and disorders experienced in this age group.

Grading: Letter Graded

OCTH 543 - Professional Development - Teaching, Learning, and Service

3 unit(s)

By integrating educational theories and methods with occupational therapy practice, this course introduces students to a variety of evidence-based instructional approaches that are fundamental for success with clients, caregivers, and colleagues.

Grading: Letter Graded

OCTH 546 - Occupational Therapy for Young Adults

3 unit(s)

Occupational therapy practice for adults ages 25-40. Integrating knowledge of theoretical frameworks, practice settings, research evidence, clinical reasoning, and regulatory policies in the provision of interventions for conditions and disorders experienced in this age group.

Grading: Letter Graded

OCTH 553 - Professional Development - Management

3 unit(s)

Management principles related to service and reimbursement models; ethical administrative, supervisory, and consultative practice in occupational therapy settings will be addressed. Ethical decision-making strategies and recent legislation and its impact on management will be covered.

Grading: Letter Graded

OCTH 555 - Qualitative Research Methods in Occupational Therapy

3 unit(s)

Reviews qualitative research designs and application to occupational therapy research. Topics include research questions, key characteristics and methods of qualitative designs; qualitative data collection strategies and analysis techniques including software used for analysis.

Prerequisite(s): OCTH 245D.

Grading: Letter Graded

OCTH 556 - Occupational Therapy with Middle Aged Adults

3 unit(s)

Occupational Therapy Practice for Middle Aged Adults age 41-65, focuses on integrating theoretical models, research evidence, clinical reasoning and regulatory policies in the provision of interventions for conditions/disorders experienced in this age group.

Grading: Letter Graded

OCTH 565 - Quantitative Research Methods in Occupational Therapy

3 unit(s)

Concepts of data analysis and statistical computing, both increasingly used in occupational therapy and the social sciences are introduced in this course. The emphasis is on the practical application of quantitative reasoning, visualization, and data analysis.

Grading: Letter Graded

OCTH 566 - Occupational Therapy for Older Adults

3 unit(s)

Focuses on older adults whose occupational participation is affected by age associated changes, illness, or disability. The occupational therapy process is applied to facilitate independence, remediate dysfunction, adapt to disability, and enhance quality of life.

Grading: Letter Graded

OCTH 575 - Advanced Research Methods and Data Analysis

2 unit(s)

Students learn advanced research methods and quantitative data analysis and how to discern which method is most appropriate for various research applications.

Prerequisite(s): OCTH 245D, OCTH 555, OCTH 565

Grading: Letter Graded

OCTH 576 - Seminar in Professional Practice

3 unit(s)

Students will examine advanced professional practice skills with assistive technologies and devices, including use of telehealth, to enhance occupational performance and foster participation and well-being for persons, populations, and communities.

Grading: Letter Graded

OCTH 585 - Evidence-Based Practice

3 unit(s)

Evidence-based practice in occupational therapy is explored through lecture, in-class activities, and database research. Emphasis is on strategies for selecting, evaluating, and analyzing professional literature for decision-making and knowledge translation addressing practice issues.

Grading: Letter Graded

OCTH 586 - Advanced Occupational Therapy Practice in Mental Health

3 unit(s)

Occupational therapy services in mental health practice will be addressed including service provision across the continuum of settings including inpatient acute care, intensive partial hospitalization programs, criminal justice and reintegration, community models, and private practice.

Grading: Letter Graded

OCTH 591A - Capstone Experience 1

3 unit(s)

Students initiate the capstone experience by completing the site orientation and beginning the data collection to support the OTD Capstone Project. Students implement the agreed upon plan for the Capstone Experience.

Prerequisite(s): OCTH 201AD and OCTH 201BD.

Grading: Credit/No Credit

OCTH 591B - Capstone Experience 2

11 unit(s)

Student completes the required 560 hours for the capstone experience completing the site orientation and completes the data collection to support the OTD Capstone Project. Student meets the agreed upon outcomes for the Capstone Experience.

Prerequisite(s): OCTH 591A and enrollment in the entry-level doctoral program.

Grading: Credit/No Credit

OCTH 595 - Doctoral Capstone Project

3 unit(s)

Student-directed inquiry course is focused on the scholarship of discovery, teaching and learning, application or integration within the occupational therapy profession. Analysis and synthesis of Capstone Experience data will be crafted into a publishable quality paper and oral presentation.

Prerequisite(s): OCTH 201AD and OCTH 201BD.

Grading: Letter Graded

Organizational Studies

ORGS 101 - People & Organizations

3 unit(s)

Study of complex organizations in which people live their lives. Topics include organizational forms and functions; internal social and cultural dynamics; growth and change in material, social and symbolic environments; and ethical issues of organizational life.

Misc/Lab: Lecture 4 hours/Activity 2 hours

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

ORGS 102 - Organizations, Inquiry & Analysis

4 unit(s)

Development of skills to analyze and design organizations. Topics include analysis of environments and resources; use of technology; communication and decision-making; workflow and division of labor; and symbols. Research skills for understanding organizational values, patterns, processes and environments.

Misc/Lab: Lecture 4 hours/Activity 2 hours

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

ORGS 103 - Organizational Studies Capstone

4 unit(s)

Capstone course required of all ORGS majors. Emphasizes team projects working with community or institutional partners to address issues through organizational design or change.

Misc/Lab: Lecture 4 hours/Activity 2 hours

Prerequisite(s): ORGS 101, ORGS 102; or instructor permission

Grading: Letter Graded

Packaging

PKG 107 - Principles of Packaging

3 unit(s)

Basic knowledge of packaging functions, materials and industry. A variety of packaging topics including distribution systems, packaging development, package design, legislation, regulations, societal and environmental issues, ergonomics and packaging careers.

Prerequisite(s): ENGL 1A or equivalent.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

PKG 120 - Artios CAD For Packaging

3 unit(s)

Prepares students for ArtiosCAD (a packaging design tool common to the folding carton and corrugated industries). Introduces basic commands of ArtiosCAD to draw and design the representations for different products. Students use the structure database, change from 2D to 3D models, and make simple animations.

Misc/lab: 2 hours lecture/2 hours activity

Grading: Letter Graded

PKG 121 - Solidworks For Packaging

3 unit(s)

Prepare students for SolidWorks (a computer drawing tool) so they can generate 3-D drawings suitable for specifications and transference to computer-driven cutting tables and 3-D printers to make prototype packages.

Misc/Lab: 2 hours lecture/2 hours lab

Grading: Letter Graded

PKG 141A - Packaging Materials I, Paper, Metal, and Wood Based

3 unit(s)

In-depth study of selected materials to provide a working knowledge of structures, physical and chemical properties, development, evaluation and design. Experiments in applications, design limitations and cost.

Lecture 2 hours/lab 2 hours.

Prerequisite(s): PKG 107 or instructor consent.

Grading: Letter Graded

PKG 141B - Packaging Materials II, Plastics, Composites, and Glass

3 unit(s)

In-depth study of plastic and glass materials in packaging; chemical and physical properties, design, manufacturing, compatibility, and evaluation. Experiments in applications, design limitations and cost.

Misc/Lab: Lecture 2 hours/lab 2 hours.

Prerequisite(s): NUFS 31, PKG 107, PKG 141A or instructor consent.

Grading: Letter Graded

PKG 146 - Packaging for Medical Devices and Pharmaceuticals

3 unit(s)

Chemical and physical properties of medical device and pharmaceuticals packages, fabrications techniques, package testing and evaluation methods, regulatory requirements, ergonomics and child resistant packages, tamper evidence, shelf life and aging, coding.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): PKG 107, PKG 141A, PKG 141B or instructor consent.

Grading: Letter Graded

PKG 152 - Globalization and the Environment

3 unit(s)

Scientific approach to goods distribution worldwide, and environmental consequences of shipping materials and packaging, which when discarded become waste. Mutual interests of commerce and environment.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENVS 152. Environmental Studies is responsible for scheduling.

PKG 156 - Packaging Machinery Systems

3 unit(s)

Evaluation of packaging machinery as a subset of a packaging production system. Component selection, design, and implementation of package filling lines in a production facility. Package design requirements for

filling lines.

Lecture 2 hours/Lab 2 hours.

Prerequisite(s): PKG 107, PKG 141A, PKG 141B, MATH 70, MATH 71 or MATH 71X, STAT 95.

Grading: Letter Graded

PKG 158 - Protective Package Design and Testing

3 unit(s)

In-depth study of protective packaging dynamics; theory and practice of shock, vibration, compression, humidity, temperature extremes. Measurement and analysis of the dist environment, product fragility, package design principles, package testing and evaluation.

Lecture 2 hours/Lab 2 hours.

Prerequisite(s): PKG 107, PKG 141A, PKG 141B, MATH 70, MATH 71 or MATH 71X, STAT 95.

Grading: Letter Graded

PKG 159 - Packaging Material Handling and Distribution

3 unit(s)

Transportation, handling, and storage of packaged goods. Transportation modes, environment hazards, measurement techniques. Military and Hazmat packaging regulations and testing, classification of goods, legal requirements, export packaging.

Prerequisite(s): PKG 158 or instructor consent.

Grading: Letter Graded

PKG 160 - Hazardous Materials Packaging

3 unit(s)

Identification and classification of hazardous materials, standards and requirements, proper documentation practices, identifying and sourcing the proper packaging materials to comply with hazardous materials packaging requires, and testing a package to provide United Nations Performance Orientated Packaging (UN POP) certification for shipping.

Lecture 2 hours/Activity 2 hours.

Grading: Letter Graded

PKG 168 - Advanced Laboratory Testing

3 unit(s)

Laboratory testing course that elaborates on concepts learned in previous classes. The focus is on good laboratory practices along with test methods covered in medical device package testing (PKG 146), packaging materials testing (PKG 141A/PKG 141B), and packaging dynamics testing (PKG 158).

Lab 3 hours.

Prerequisite(s): PKG 141A, PKG 146 and PKG 158.

Grading: Credit/No Credit

PKG 169 - Food Packaging and Preservation

3 unit(s)

This course investigates the interaction of food processing and packaging technology. Content includes food chemistry, microbiology in foods, food processing, and finally how packaging augments these areas in food protection and preservation.

Prerequisite(s): PKG 107 or instructor consent.

Grading: Letter Graded

PKG 170 - Packaging Development and Management

3 unit(s)

Capstone course emphasizing development and evaluation of packaging systems. Specifications and design, marketing criteria, package production, distribution performance, legal and environmental evaluations.

Lecture 2 hours/lab 2 hours.

Prerequisite(s): PKG 107, PKG 141A, PKG 141B, PKG 156, PKG 158 or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

PKG 180 - Individual Studies

1-6 unit(s)

Individual work for majors or minors on special topics by arrangement.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): PKG 107; instructor and department chair consent during semester prior to enrollment.

Grading: Credit/No Credit

PKG 268 - Advanced Laboratory Testing and Analysis

3 unit(s)

Focuses on good laboratory practices along with test methods covered in previous classes, such as medical device package testing (PKG 146), packaging materials testing (PKG 141A / PKG 141B), and packaging dynamics testing (PKG 158). At the completion of the class, students should be able to clearly organize, analyze, and present their data in a clear and concise manner.

Prerequisite(s): PKG 146 and PKG 158.

Grading: Credit/No Credit.

PKG 270 - Package Design for End Use

3 unit(s)

Current Package Design and Influences on Designs.

Grading: Letter Graded

Philosophy

PHIL 9 - Mathematics and Logic for General Education

3 unit(s)

A survey of basic concepts and methods, focusing on logic, computation, sets, numbers, geometry and probability. Emphasis will be placed on using these concepts in daily life and in coping with public issues.

Satisfies B4: Mathematics/Quantitative Reasoning.

Corequisite(s): PHIL 9W required as a corequisite for Math Enrollment Categories M-III and M-IV; and recommended for Enrollment Category M-II.

Grading: Letter Graded

PHIL 9W - Mathematics & Logic for General Education Workshop

1 unit(s)

Companion laboratory-style course for PHIL 9; concurrent enrollment in both is required. Focuses on providing extra help and support for students with both concepts and techniques from propositional logic and from first-order logic.

Corequisite(s): PHIL 9.

Grading: Letter Graded

PHIL 10 - Introduction to Philosophy

3 unit(s)

Perennial problems in philosophy, such as Who am I? What can I know? How should I live? Classical philosophical statements bearing on these issues.

Satisfies C2: Humanities.

Grading: Letter Graded

PHIL 12 - Human Nature and the Meaning of Life

3 unit(s)

Survey of philosophical discussions of various topics related to the definition and understanding of human nature and the meaning of life, including questions such as: In what ways or to what degree (if any) are human beings unique among other forms of life? What is the role of desire in human nature? What is the nature of and/or limitations on human freedom? In what ways are freedom and moral responsibility linked? What is the Meaning of Life?

Satisfies E: Human Understanding & Development.

Grading: Letter Graded.

PHIL 57 - Logic and Critical Reasoning

3 unit(s)

Basic concepts of logic; goals and standards of both deductive and inductive reasoning; techniques of argument analysis and assessment; evaluation of evidence; language and definition; fallacies.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded

PHIL 61 - Moral Issues

3 unit(s)

Moral philosophy covering major ethical theories and contemporary moral issues, such as abortion, euthanasia, animal rights, capital punishment, and sexuality.

Satisfies C2: Humanities.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

PHIL 66 - Introduction to Aesthetics

3 unit(s)

Issues such as the nature of beauty and ugliness, definition of art, creativity, and interpretation and evaluation of art. Philosophical discussion of works of art and our responses to them.

Satisfies C1: Arts.

Grading: Letter Graded

PHIL 70A - Ancient Philosophy

3 unit(s)

Exploration of primary texts from the global history of philosophy prior to 500 CE, including key works of Plato and Aristotle. Other texts for the course may be drawn from a wide variety of global philosophical traditions, including (but not limited to) texts from Hindu, Buddhist, Confucian, Abrahamic, Greek, Roman, Mesopotamian, and African sources.

Satisfies C2: Humanities.

Grading: Letter Graded.

PHIL 70B - Early Modern Philosophy

3 unit(s)

Exploration of primary texts from the global history of philosophy in the 16th-18th centuries CE. Texts may include works by Descartes, Elizabeth of Bohemia, Cavendish, Locke, Astell, Berkeley, Amo, Hume, and Kant. Other texts for the course may be drawn from a wide variety of global philosophical traditions,

including texts originating in non-European philosophical traditions.

Satisfies C2: Humanities.

Grading: Letter Graded.

PHIL 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PHIL 96L - Math & Logic for GE Workshop

1 unit(s)

In-depth exploration of concepts, methods, and problem-solving strategies for PHIL 009. Opportunities for additional practice, applications, and feedback.

Corequisite(s): PHIL 9

Grading: Letter Graded

PHIL 104 - Asian Philosophy

3 unit(s)

Philosophical examination of Confucianism, Daoism, Buddhism and some other significant movements of thought originated in Asia. Comparison with Western philosophy.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ASIA 104 / RELS 104. Philosophy is responsible for scheduling.

PHIL 106 - Philosophy of Art

3 unit(s)

Aesthetics covering the main schools of thought about art and selected topics related to specific arts, music, theatre, sculpture, painting, literature, etc.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

PHIL 107 - Philosophy and Literature

3 unit(s)

Philosophical theories presented through philosophical texts and philosophically focused literary works.

Prerequisite(s): 3 units of Philosophy or upper division standing.

Grading: Letter Graded

PHIL 108 - Political and Social Philosophy

3 unit(s)

Equality, justice, rights, liberty, the state, law and revolution. Readings drawn from classical and contemporary sources.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

PHIL 109 - Philosophy of Religion

3 unit(s)

Philosophical issues regarding the existence of a supreme being, evil, mysticism, miracles, reincarnation, faith, the possibility of enlightenment, and the connection between religion and morality.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with RELS 109. Philosophy is responsible for scheduling.

PHIL 110 - Science, Technology and Human Values

3 unit(s)

The aims, methods and world views of science and technology; such value issues as technological determinism, design aesthetics and moral implications of computer and other technologies.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

PHIL 111 - Medical Ethics

3 unit(s)

(Formerly PHIL/GERO/NURS/HS 111) Selected ethical problems in health care practices. For example, abortion, patient rights, national health care, euthanasia and genetic engineering, with emphasis on philosophical methods.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with GERO 111 Philosophy is responsible for scheduling.
Sustainability Related - SDG 3: Good Health and Well-Being

PHIL 112 - American Philosophy

3 unit(s)

The eighteenth century beginnings of American philosophy, Transcendentalism, Pragmatism, classic American philosophy, including Emerson, Peirce, James, Santayana, Dewey, and recent developments.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

PHIL 113 - Existentialism and Phenomenology

3 unit(s)

Twentieth century philosophies of experience and human existence. Main topics include description of consciousness, personal authenticity, choice, anxiety, death of God. Philosophers range from Husserl and Heidegger to Sartre and de Beauvoir.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

PHIL 117 - Philosophy of Race

3 unit(s)

Introduces and analyzes the predominant philosophical, cultural and scientific views on race and examines the issue of racism primarily in American culture. Topics include: social construction of race, nature of racism, intersection of race and other systems of oppression (e.g. sexism, classism, ableism etc.), as well as contemporary issues such as race-based medicine, race and the industrial prison complex, immigration, and racial justice.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

PHIL 118 - Latin American Philosophy

3 unit(s)

Analysis of main themes of Latin-American, Mexican and Mexican-American thought.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

PHIL 119 - Africana Philosophy and Culture

3 unit(s)

Philosophical examination of the ideological roots of social movements in black diaspora cultures from Be-Bop to Hip-Hop.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with AFAM 119. Philosophy is responsible for scheduling.

PHIL 120 - Comparative Philosophy Theory & Practice

3 unit(s)

Examination of how different philosophical traditions (distinguished by culture or by style) via their relevant resources can talk to and learn from each other and make substantial joint contributions to our understanding and treatment of a range of philosophical issues.

Prerequisite(s): 3 units of philosophy or upper division standing

Grading: Letter Graded

PHIL 121 - Philosophy and Feminism

3 unit(s)

A philosophical examination of writings that deal with issues of special concern to women, with emphasis on feminist writings.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with WGSS 121. Philosophy is responsible for scheduling.

Sustainability Focused - SDG 5: Gender Equality

PHIL 122 - Social Justice

3 unit(s)

Critical examination of competing conceptions of justice and their application to social issues in a pluralistic society.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

PHIL 126 - Environmental Ethics and Philosophy

3 unit(s)

Extensions and applications of Kantian, Lockean, consequentialist and other philosophical theories of value to problems of the environment such as pollution, global warming, species depletion and overpopulation.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with ENVS 126. Philosophy is responsible for scheduling.

Sustainability Focused - SDG 4: Quality Education

PHIL 132 - Ethical Theory

3 unit(s)

Theoretical problems in the understanding of right conduct, value, obligation, justice, and virtue.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

PHIL 133 - Ethics in Science

3 unit(s)

An examination of values and practices in the culture of science. Issues: transmission of values in scientific communities, interactions between scientific and lay communities, historical development of norms of responsible research, cultural influence on scientific values.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

PHIL 134 - Computers, Ethics and Society

3 unit(s)

The nature of privacy in a technologically interconnected world; the role of computer technologies in the exercise of the human intellect and imagination with respect to freedom of expression and the social good; rights and responsibilities of intellectual property ownership.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

PHIL 137 - Puzzles in Innovation and Law

3 unit(s)

Issues surrounding innovation: what exactly innovation is; whether it is created or discovered; why the law should protect it; whether innovators have special natural claims over their innovations; and whether the law ought to aim at a set of rules regarding innovation that maximizes societal well-being.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

PHIL 149 - Metaphysics & Epistemology

3 unit(s)

Such topics as nature of knowledge, skepticism, nature of reality, space, time, substance and causality. Course is repeatable once for credit in different area.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

PHIL 155 - Philosophy of Law

3 unit(s)

Theories of the nature of law, legal reasoning, and morality. Philosophical issues in criminal, civil, and constitutional law.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

PHIL 157 - Intermediate Logic & Language Analysis

3 unit(s)

Predicate logic, methods of proof and some meta theory. Additional systems of logic may be considered.

Prerequisite(s): PHIL 9, PHIL 57, or instructor consent.

Grading: Letter Graded.

PHIL 158 - Philosophy of Language

3 unit(s)

Philosophical investigations into language in view of its relation to reality, thought, and logic.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

PHIL 159 - Philosophy of Mind

3 unit(s)

Problems in connection with emotion, intention, human action and personal identity.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

PHIL 160 - Philosophy of Science

3 unit(s)

Scientific methodology, explanation and verification; science and society. Varying topics from physical, biological and social sciences.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

PHIL 180 - Individual Studies

1-3 unit(s)

By arrangement. Course is repeatable for a total of 4 units.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Department chair consent.

Grading: Credit/No Credit

PHIL 184 - Directed Reading

1-3 unit(s)

Course is repeatable for a total of 4 units.

Course may be repeated for credit for up to 3 units.

Prerequisite(s): Qualified upper division student.

Grading: Credit/No Credit

PHIL 186 - Professional and Business Ethics

3 unit(s)

Interdisciplinary study of types of ethical problems which arise within the contexts of business occupations and professions. Major ethical theories, critique of economic and criminal justice. Focus is on issues of justice and equality in the U.S. Case studies.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with BUS3 186. Philosophy is responsible for scheduling.

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

PHIL 190 - Seminar in Philosophical Classics

3 unit(s)

Works of a major philosopher or philosophical tradition. Course is repeatable for up to 12 units of credit when a seminar topic is different.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): PHIL 70A and PHIL 70B and 6 units of upper division philosophy or instructor consent.

Grading: Letter Graded

PHIL 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad

Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PHIL 195 - Seminar in Philosophy of Law

3 unit(s)

Critical examination of topics in legal philosophy.

Prerequisite(s): 3 units of Philosophy and upper division standing.

Grading: Letter Graded

PHIL 289 - Graduate Proseminar

3 unit(s)

Prepares graduate students for graduate work, teaching, professionalism, and future steps' particularly applying to PhD programs or teaching jobs. Topics include: reading philosophy, the writing process, teaching pedagogy, course design, presenting in professional settings, and writing a successful application. Open to advanced undergraduate students who are considering pursuing graduate work in philosophy.

Prerequisite(s): Graduate student or upper division Philosophy major standing.

Grading: Letter Graded

PHIL 290 - Advanced Seminar in a Selected Philosopher or Tradition

3 unit(s)

An exhaustive and detailed study of the entire, or most significant, writings of some outstanding philosopher or philosophical tradition.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course is repeatable for credit when seminar topic is different.

Prerequisite(s): Nine units of philosophy including PHIL 70A and PHIL 70B or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

PHIL 291 - Advanced Seminar in Epistemology and Metaphysics

3 unit(s)

Classical or contemporary problems in knowledge and reality.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course is repeatable for credit when seminar topic is different.

Prerequisite(s): At least one upper division course in epistemology or metaphysics, or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

PHIL 292 - Advanced Seminar in Ethics or Aesthetics

3 unit(s)

Classic or contemporary problems in some value area such as that of moral or aesthetic value. Course is repeatable for up to 12 units of credit when seminar topic is different.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): At least one upper division course in ethics or value theory, or instructor consent.

Grading: Letter Graded

PHIL 293 - Advanced Seminar in Logical Theory

3 unit(s)

Concepts of logic, such as truth and inference, considered on an advanced level. Course is repeatable for credit when seminar topic is different.

Prerequisite(s): PHIL 9, PHIL 157 or instructor consent.

Grading: Letter Graded

PHIL 298 - Special Studies

1-3 unit(s)

Prerequisite(s): Advisor consent.

Grading: Mandatory Credit/No Credit/RP

PHIL 299 - Master's Thesis

3 unit(s)

Prerequisite(s): Advisor consent.

Grading: Mandatory Credit/No Credit/RP

Photography

PHOT 40 - Beginning Photography

3 unit(s)

A Beginning photography course which introduces basic aesthetic issues in (primarily black and white) image making. Introduces photographic technique utilizing digital cameras, electronic image processing and digital printing. Requires a DSLR (digital single lens reflex) type camera. Requires Adobe Lightroom.

Grading: Letter Graded

PHOT 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PHOT 110 - Black and White Photography

3 unit(s)

A traditional darkroom photography class which introduces black and white film developing, fiber based printing, and image manipulation and presentation techniques. Taught with traditional film and photo paper; requires a film camera, limited number of which department can loan students.

Prerequisite(s): PHOT 40.

Grading: Letter Graded

PHOT 112 - Color Photography

3 unit(s)

An intermediate course introducing principles of color photography, color theory, a refined use of the camera and digital printing techniques. Requires a DSLR (digital single lens reflex) type camera. Requires Adobe Lightroom and Adobe Photoshop.

Prerequisite(s): PHOT 40.

Grading: Letter Graded

PHOT 113 - Alternative Photo Media

3 unit(s)

Explores historical, handmade photographic printing processes which open avenues of expression unavailable through contemporary photographic processes. Cyanotype, Van Dyke, and gum bichromate techniques are covered, as well as creating traditional and digital negatives for contact printing.

Activity 6 hours.

Prerequisite(s): PHOT 40

Grading: Letter Graded

PHOT 114 - Advanced Black and White Photography

3 unit(s)

An advanced exploration of traditional silver based film and darkroom printing, the use of view cameras, and the Zone System. Provides students with the opportunity to explore qualities of expression unique to the gelatin silver process.

Prerequisite(s): PHOT 40 and PHOT 110 or instructor consent.

Grading: Letter Graded

PHOT 115 - Intermediate Digital Imaging

3 unit(s)

An intermediate level course investigating the unique possibilities afforded by contemporary digital imaging. Includes preparation of images for presentation via print, video and/or web. Emphasis upon incorporating digital tools with ongoing development of student work.

Prerequisite(s): PHOT 40.

Grading: Letter Graded

PHOT 116 - Contemporary Issues in Photography

3 unit(s)

Examination and discussion of aesthetic trends and philosophies in photography and related media, their impact on the medium and society.

Prerequisite(s): PHOT 40

Grading: Letter Graded

PHOT 120 - Image and Idea

3 unit(s)

An intermediate course in which students pursue individual projects. Emphasis on diverse strategies of approach and presentation which culminate in a group exhibition.

Prerequisite(s): PHOT 40.

Grading: Letter Graded.

PHOT 121 - Introduction to Studio Lighting

3 unit(s)

Concepts and principles of lighting using both daylight and incandescent light sources and the use of standard studio lighting equipment.

Prerequisite(s): PHOT 40.

Grading: Letter Graded

PHOT 122 - Advanced Lighting: Working with Strobes

3 unit(s)

An advanced lighting course incorporating strobes and professional photographic tools and techniques in the studio and on location that can be applied to commercial advertising photography or fine art imagery. Training on professional-level equipment and software is emphasized.

Prerequisite(s): PHOT 121

Grading: Letter Graded

PHOT 123 - Photography as Illustration

3 unit(s)

Technical and conceptual aspects of producing effective photographic illustrations for fine art and commercial purposes (fine art exhibitions, advertisements, posters, magazines, story illustrations, etc.). Can include studio work, location photography, darkroom work and digital manipulation.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): PHOT 40.

Grading: Letter Graded

PHOT 125 - Special Topics in Photography

3 unit(s)

Photography is a rapidly evolving field of study. In order to keep our curriculum current and add diversity to our staple of course offerings, our Photo 125, "Special Topics in Photography" offers a rotating variety of contemporary topics. Can be repeated for up to 15 units of credit when course topic changes.

Course may be repeated for credit for up to 15 units.

Prerequisite(s): PHOT 112, PHOT 113, PHOT 115, or instructor consent.

Grading: Letter Graded

PHOT 126 - History of Photography

3 unit(s)

Technical developments and aesthetic trends in photography traced from its invention in the nineteenth century to the present day. Slide presentations, discussions, field trips.

Prerequisite(s): ARTH 70B or instructor consent.

Grading: Letter Graded

Cross-listed with ARTH 126. Art and Art History is responsible for scheduling.

PHOT 129 - Professional Practices in Photography

3 unit(s)

Designed to prepare graduating photo majors for practicing their profession. Emphasis will be placed on building a comprehensive portfolio and business identity. Course is repeatable once for credit.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): PHOT 120, PHOT 121, plus two additional upper division photography courses.

Grading: Letter Graded

PHOT 180 - Individual Studies

1-3 unit(s)

Individual work under guidance in field of special interest.

Prerequisite(s): PHOT 110.

Grading: Credit/No Credit

PHOT 192 - International Program Studies

1-9 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PHOT 197 - Senior Project Photography

3 unit(s)

Advanced course focused on creation or further development of photo-based project to be determined by the student and consisting of new work. Course emphasizes developing professional exit skills, a final body of finished work, and a professional portfolio.

7 hours activity.

Prerequisite(s): 15 units of upper division courses in PHOT.

Grading: Letter Graded

Physics

PHYS 1 - Elementary Physics

3 unit(s)

Mechanics, energy, electricity, magnetism, optics, atomic and nuclear physics, properties of matter; emphasizes practical applications of physics principles to contemporary problems.

Satisfies B1: Physical Science.

Prerequisite(s): The following Declared Majors are not allowed to enroll in this course: Engineering, Chemistry, Geology, Meteorology, Physics, Earth Science.

Grading: Letter Graded

PHYS 2A - Fundamentals of Physics

4 unit(s)

First semester of a two-semester sequence that is non-calculus based and covers the topics of mechanics, heat, and sound.

Lecture 1 hour/Lab 3 hours/Discussion 2 hours.

Satisfies B1: Physical Science + B3: Laboratory.

Prerequisite(s): Algebra. Department permission needed if this course is not required for student's major.

Grading: Letter Graded.

Note(s): Year course. Declared Physics majors not allowed.

PHYS 2B - Fundamentals of Physics

4 unit(s)

Electricity and magnetism, optics and atomic structure.

Misc/Lab: Lecture 3 hours/lab 3 hours.

Satisfies B1 + B3: Physical + Lab Science.

Prerequisite(s): PHYS 2A (with grade of "C-" or better).

Grading: Letter Graded

Note(s): Declared Physics majors not allowed.

PHYS 20 - Invitation to Physics and Astronomy

1 unit(s)

Introduction to the physics department, its faculty, and basic skills necessary for success as a physics major. Topics include relativity and quantum theory for beginners, careers in physics and astronomy, career pathways of BA/BS physics recipients, the role of research in undergraduate STEM education, a historical perspective on the field of physics, and physics/astronomy in the news.

Grading: Letter Graded

PHYS 23 - Animation Physics

3 unit(s)

This course presents principles and concepts of physics relevant to animation and special effects. Students will demonstrate mastery of this scientific knowledge in the critical analysis of films, shows, video games, etc., and in creating their own animated shorts.

Satisfies B1: Physical Science.

Grading: Letter Graded

PHYS 40 - Introduction to Computational Physics

3 unit(s)

An introduction to programming for physics majors who have no previous programming experience. Problem solving, data visualization and analysis using computational methods.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): PHYS 50.

Grading: Letter Graded

PHYS 49 - Introduction to Physics

3 unit(s)

A preparatory course in physics for science and engineering majors, emphasizing significant figures, unit conversions, vectors, quantitative reasoning. Introduction to Newton's Laws and conservation laws. The relevance of physics to science and engineering careers.

Prerequisite(s): MATH 19 or pre-calc placement test

Grading: Letter Graded

PHYS 50 - General Physics I: Mechanics

4 unit(s)

A calculus-based treatment of particle kinematics and dynamics, work, energy, momentum, rotational motion, equilibrium, and simple harmonic motion.

Lecture 3 hours/lab 3 hours.

Satisfies B1: Physical Science + B3: Laboratory.

Prerequisite(s): Writing Enrollment Category I / II / III or GE Area A2 completed (grade of C- or better) or ENGL 1AF (grade of CR); AND, 3 or better on AP Calculus Test, or C- or better in MATH 30/30X. Allowed declared majors: College of Science or Engineering.

Grading: Letter Graded

PHYS 50W - General Physics/Mechanics Workshop

1 unit(s)

A discussion course for students concurrently registered in PHYS 50 General Physics/Mechanics covering problem solving methods as related to topics normally covered in PHYS 50.

Course may be repeated for credit for up to 3 units.

Corequisite(s): PHYS 50

Grading: Credit/No Credit

PHYS 51 - General Physics II: Electricity and Magnetism

4 unit(s)

A calculus-based introduction to electricity and magnetism, covering electric charges, electric and magnetic fields, dc and ac circuits, and electromagnetic waves.

Lecture 3 hours/lab 3 hours.

Satisfies B1: Physical Science + B3: Laboratory.

Prerequisite(s): PHYS 50, MATH 31 or MATH 31X, both with grades of "C-" or better. Allowed declared majors: College of Science or Engineering majors only.

Grading: Letter Graded

PHYS 52 - General Physics III: Waves, Light, Heat

4 unit(s)

Mechanical waves, light, spectra, quantization of electromagnetic radiation; geometric and physical optics; temperature, heat, and thermodynamics.

Lecture 3 hours/lab 3 hours.

Satisfies B1: Physical Science + B3: Laboratory.

Prerequisite(s): PHYS 51 with grade of "C-" or better. Allowed declared majors: College of Science or Engineering majors only.

Grading: Letter Graded

PHYS 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PHYS 100W - Methods of Research and Communication in Physics

3 unit(s)

Develop communication skills for physics, including proposals, posters, research reports and oral presentations. Research strategies and methodologies for effective communication to general and specialized audiences.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

PHYS 105A - Advanced Mechanics I

4 unit(s)

Dynamics of particles, Newtons laws, Lagranges and Hamiltons equations, conservation laws, symmetry and the laws of physics, oscillations, central-force motion, and non-inertial reference frames.

Prerequisite(s): PHYS 52, MATH 33A, each with grade of "C-" or better.

Grading: Letter Graded

Note(s): Year course.

PHYS 105B - Advanced Mechanics II

3 unit(s)

Dynamics of systems of particles: collisions, rigid body rotations, non-inertial frames, coupled oscillations, waves. This course is strongly recommended for students who are considering graduate study in physics.

Prerequisite(s): PHYS 105A with grade "C-" or better.

Grading: Letter Graded

PHYS 107 - Waves and Oscillations

3 unit(s)

Oscillatory phenomena and their connection to waves. Review of simple harmonic motion and extension to damped, driven, and coupled oscillators. Applications to waves on strings, and basic concepts of electromagnetic and sound waves. Connections to the beginnings of quantum theory are developed.

Prerequisite(s): PHYS 52 (or equivalent coverage of waves and oscillations) and PHYS 105A, both with C- or better.

Grading: Letter Graded

PHYS 110A - Electricity and Magnetism I

3 unit(s)

Theories of electrostatics, magnetostatics, electrodynamics and electromagnetic waves.

Prerequisite(s): PHYS 130, MATH 33A, each with "C-" or better.

Grading: Letter Graded

Note(s): Year course.

PHYS 110B - Electricity and Magnetism II

3 unit(s)

Theories of electrostatics, magnetostatics, electrodynamics and electromagnetic waves.

Prerequisite(s): PHYS 110A

Grading: Letter Graded

PHYS 120A - Electronics, Data Acquisition & Analysis

3 unit(s)

The characteristics of basic analog and digital electronic circuits used in a scientific laboratory. Topics include transistors, operational amplifiers, digital electronic circuits, and computer data acquisition.

Misc/Lab: Seminar 2 hours/lab 3 hours.

Prerequisite(s): PHYS 51 with "C" or better. Physics Majors Only, or instructor consent.

Grading: Letter Graded.

PHYS 120B - Advanced Scientific Measurements Laboratory

3 unit(s)

Modern experimental techniques in the context of modern and solid state physics. Examples include phase

sensitive detection, spectrum analysis, four-point-probe resistivity measurements, and related techniques.

Seminar 1 hour/Lab 6 hours.

Prerequisite(s): PHYS 122 and PHYS 120A both with C or better.

Grading: Letter Graded.

PHYS 120C - Advanced Physics Lab: Optics and Lasers

3 unit(s)

Design of optical systems involving lasers and other common optical components. Use of optical systems to explore interference, holography, and other optical phenomena.

Misc/Lab: Lecture 1 hour/lab 6 hours.

Prerequisite(s): PHYS 52, PHYS 120A and PHYS 158 all with grade of "C-" or better.

Grading: Letter Graded

PHYS 121S - Radiation Safety

1-2 unit(s)

Health hazards involved in working with radioactive substances. Physical nature of hazards, biological effects, standards of permissible exposures, safety precautions and protection techniques. Two units meet State of California recommendations.

Prerequisite(s): Lower division calculus, chemistry and physics.

Grading: Letter Graded

Cross-listed with CHEM 121S / NUCS 121S. Chemistry is responsible for scheduling.

PHYS 122 - Modern Physics

4 unit(s)

Survey of modern physics for science majors, covering special relativity, pre-quantum theory, basic quantum mechanics, atomic and molecular physics, solid state physics, nuclear and particle physics, and cosmology. Historical foundations of these topics will also be presented.

Prerequisite(s): CHEM 1A, MATH 32, and PHYS 52 all with a C- or better.

Grading: Letter Graded

PHYS 126 - Introduction to Nuclear Science

3 unit(s)

Properties of the atomic nucleus. Applications of nuclear science in biology, chemistry, engineering, geology and physics.

Prerequisite(s): Lower division calculus, chemistry and physics.

Grading: Letter Graded

Cross-listed with CHEM 126 / NUCS 126. Chemistry is responsible for scheduling.

PHYS 127 - Nuclear Science Lab

3 unit(s)

Basic techniques and procedures used in nuclear science. Nuclear decay, nuclear reactions, radiation detection and measurements, nuclear analytical methods and tracer techniques.

Misc/Lab: Lecture 1 hour/lab 6 hours.

Prerequisite(s): NUCS 121S, CHEM 100W and CHEM 126 (with grades of "C" or better; "C-" not accepted); or instructor consent.

Grading: ABC-/No Credit

Cross-listed with CHEM 127 / NUCS 127. Chemistry is responsible for scheduling.

PHYS 130 - Mathematical Methods in Physics

4 unit(s)

Mathematical methodologies commonly used in physics, including linear algebra, vector calculus, partial differential equations and complex variables, and their applications to classical mechanics, electricity and magnetism, and quantum mechanics.

Prerequisite(s): MATH 32 or MATH 32X, and PHYS 52.

Grading: Letter Graded

PHYS 140 - Computational Methods in Physics

3 unit(s)

An introduction to the programming of algorithms and numerical techniques pertinent to physical systems.

Misc/Lab: Seminar 2 hours/lab 3 hours.

Prerequisite(s): PHYS 40 or previous programming experience; PHYS 52 with a C- or better. Physics Majors only, or instructor consent.

Grading: Letter Graded.

PHYS 155 - Topics in Physics and Astronomy

3-9 unit(s)

Trending topics of physics and astronomy research and areas of special interest. Content varies by semester.

Course repeatable when topic changes for a total of 9 units.

Prerequisite(s): PHYS 52, and MATH 32 or MATH 32X, both with a C- or better. Or Instructor Consent.

Grading: Letter Graded

PHYS 158 - Modern Optics

3 unit(s)

Thin and thick lens systems. Double and multiple beam interference, holography, Fraunhofer and Fresnel diffraction, Fourier optics, spatial filtering, polarization and birefringence.

Prerequisite(s): PHYS 52 with a C- or better; MATH 32 or MATH 32X.

Grading: Letter Graded

PHYS 160 - Thermodynamics and Statistical Physics

3 unit(s)

The laws of thermodynamics and kinetic theory with introduction to statistical mechanics.

Prerequisite(s): CHEM 1A and PHYS 52 both with a C- or better; MATH 32 or MATH 32X.

Grading: Letter Graded

PHYS 161 - Fundamentals of Quantum Information

3 unit(s)

Introduction to fundamental topics in quantum information science (QIS). Course covers select concepts in quantum theory used in quantum technology including discrete quantum systems, measurements, quantum states, entanglement, and physical implementation of gate operations. Modern applications of QIS are discussed including quantum communication, quantum computing, and physical hardware for quantum bits.

Prerequisite(s): Graduate standing or PHYS 51 and one of the following: PHYS 130 or MATH 33LA or MATH 39. All with C- or better. Or instructor consent.

Grading: Letter Graded.

PHYS 163 - Quantum Mechanics

3 unit(s)

General principles of quantum theories. Wave functions, operator algebra and approximation methods. Applications to atomic structure and solid state physics.

Prerequisite(s): PHYS 122, MATH 33A, PHYS 130, all with a grade of "C-" or better.

Grading: Letter Graded

PHYS 168 - Lasers

3 unit(s)

Properties of lasers and Gaussian light beams. Principles of laser operation and design. Application of lasers.

Prerequisite(s): PHYS 122 and PHYS 158 with a C- or better.

Corequisite(s): PHYS 110B.

Grading: Letter Graded

PHYS 175A - Solid State Physics

3 unit(s)

A detailed treatment of the physics of solids using quantum mechanics, crystallography, electromagnetism, and metallurgy.

Prerequisite(s): PHYS 122 with grade of "C-" or better.

Grading: Letter Graded

PHYS 180 - Individual Studies

1-4 unit(s)

Advanced work in special fields.

Prerequisite(s): Instructor consent. Not available to Open University Students.

Grading: Credit/No Credit.

Note(s): Maximum 4 units of 180/184 may be applied toward graduation.

PHYS 184 - Directed Reading & Professional Development

1-3 unit(s)

Assigned readings of selected books, journals, resource guides, and special papers to fill gaps in training or for contact with new fields. Activities can include mentorship in development toward academic and career goals in physics and/or related fields. Weekly meetings.

Course may be repeated for credit for up to 4 units. See note.

Prerequisite(s): Not available to Open University Students.

Grading: Credit/No Credit.

Note(s): Maximum of 4 units of PHYS 180 / PHYS 184 may be applied toward graduation.

PHYS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PHYS 200W - Research and Communication in Physics

3 unit(s)

Learn and develop modern research and communication skills for physics and astronomy, including literature review, proposal writing, posters, research reports, theses, publications, resume/CV, and oral presentations. Research strategies and methodologies for effective communication to general and specialized audiences.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

PHYS 205 - Advanced Dynamics

3 unit(s)

Generalized methods and selected topics in classical mechanics.

Prerequisite(s): PHYS 105A, PHYS 130, and MATH 33A, or equivalents; or instructor consent.

Grading: Letter Graded

PHYS 208 - Introduction to Electro-Optics

3 unit(s)

This course introduces the physical principles of electro-optics including modulators (electro- and acousto-optic), non-linear optics, semiconductor lasers, optical detection and integrated optics with applications.

Prerequisite(s): PHYS 158

Grading: Letter Graded

PHYS 210 - Electromagnetic Theory

3 unit(s)

Advanced topics in electromagnetic theory; Maxwell's equations; solutions of Laplace's and Poisson's equations; Green functions; electromagnetic properties of materials; electromagnetic waves and wave propagation.

Prerequisite(s): PHYS 230.

Grading: Letter Graded

PHYS 220E - Graduate Optics Lab

3 unit(s)

Covers the application of Lasers and Optics with emphasis on topics such as Gaussian beams, Fabry-Perot cavities, Laser oscillators including CW and pulsed operation, non-linear optics, frequency stabilization and Fourier Optics. Communication of scientific content through written communication.

Lecture 2 hours/Lab 3 hours.

Satisfies GEAR: Graduation Writing Assessment Requirement.

Prerequisite(s): PHYS 120C or PHYS 208 or PHYS 258 or PHYS 268.

Grading: Letter Graded.

Note(s): This course satisfies graduate-level GEAR in this master's program.

PHYS 230 - Methods in Mathematical Physics

3 unit(s)

Partial differential equations and special functions: Bessel functions, Legendre polynomials, spherical harmonics; Green's functions; complex variables and contour integrations; matrices and eigenvalue problems; Fourier and Laplace transforms.

Prerequisite(s): MATH 33A and PHYS 130, or equivalents; or instructor consent.

Grading: Letter Graded

PHYS 240 - Computational Physics

3 unit(s)

Numerical techniques and computational methods applied to solving problems from various branches of physics.

Prerequisite(s): PHYS 40, PHYS 105A, and PHYS 163, or equivalents; or instructor consent.

Grading: Letter Graded

PHYS 250 - Quantum Programming

3 unit(s)

Introduction to quantum algorithms and programming a quantum computer. Includes a review of relevant quantum mechanical concepts, topics from linear algebra and complex numbers, spins and qubits, quantum gates and circuits, entanglement, quantum algorithms, such as Deutsch-Jozsa, Grover, quantum Fourier transforms.

Prerequisite(s): Graduate standing, or PHYS 163 and instructor approval.

Grading: Letter graded.

PHYS 253 - Quantum Many-Body Physics

3 unit(s)

From the perspective of quantum information science, the course builds functional understanding of phase transitions and quantum simulations via systems of interacting spins. Systems of non-interacting Bosons and Fermions will be examined, followed by an examination of interacting particles via the Hubbard model and some coverage of numerical solutions for small systems.

Prerequisite(s): Graduate standing and PHYS 161, or equivalent with approval of program advisor.

Grading: Letter graded.

PHYS 255 - Advanced Topics in Physics

3 unit(s)

Selected topics in physics. Topics vary each semester.

Course may be repeated for credit when topic changes.

Prerequisite(s): Suitable upper division background in physics and mathematics.

Grading: Letter Graded.

PHYS 255C - Celestial Mechanics

3 unit(s)

Basic concepts in celestial mechanics emphasizing orbital mechanics and the calculation of orbital perturbation. Topics covered include dynamical principles, potential theory, planetary equations, the disturbing function, Lagrange's perturbation equations and geopotential perturbations.

Prerequisite(s): Senior or graduate standing.

Grading: Letter Graded

PHYS 257 - General Relativity

3 unit(s)

General Relativity is the foundation for modern understanding of space and time. Coverage includes review of Special Relativity followed by the development of the mathematical tools of tensor calculus and Riemannian geometry and derivation of Einstein's field equations from the postulates of General Relativity. Topics covered include the energy-momentum tensor, geodesics, and curvature tensors, as well as applications of the theory to Black Holes, gravitational waves, and cosmology.

Prerequisite(s): PHYS 130 and PHYS 110B, or equivalent. Upper division standing or graduate standing.

Grading: Letter Graded

PHYS 258 - Optics

3 unit(s)

Fourier optics, diffraction theory, imaging and image enhancement, holography and information processing.

Prerequisite(s): PHYS 158 and MATH 33A.

Grading: Letter Graded

PHYS 260 - Statistical Mechanics

3 unit(s)

Classical and quantum statistics with applications to properties of matter. Principles of thermodynamics.

Prerequisite(s): PHYS 160 and PHYS 163.

Grading: Letter Graded

PHYS 263A - Quantum Theory

3 unit(s)

Postulates of quantum theory. The Schroedinger equation and its solution for simple physical systems. Heisenberg's matrix formulation of quantum mechanics. Approximation methods: Time dependent and time independent perturbation theory. Variational method.

Prerequisite(s): PHYS 163, PHYS 230.

Grading: Letter Graded

PHYS 268 - Laser Spectroscopy

3 unit(s)

Importance of spectroscopy. Interaction of radiation with matter. Instrumentation for laser spectroscopy. Examples of various techniques, cw and pulsed.

Prerequisite(s): PHYS 110B, PHYS 158 or instructor consent.

Grading: Letter Graded

Cross-listed with CHEM 268. Physics and Astronomy is responsible for scheduling.

PHYS 275 - Solid State Physics

3 unit(s)

Properties of crystals; electric, magnetic and thermal properties of solids.

Prerequisite(s): PHYS 263A or instructor consent.

Grading: Letter Graded

PHYS 285 - Seminar

1 unit(s)

Meetings for the presentation and discussion of advanced studies in special fields including work by the faculty, guest investigators and graduate students. Topics will vary each semester.

Grading: Credit/No Credit.

PHYS 297 - Directed Research

1-5 unit(s)

Advanced work in special fields. Only open to currently enrolled graduate students.

Course may be repeated for credit for up to 5 units.

Grading: Mandatory Credit/No Credit/RP

Note(s): Not available to Open University students.

PHYS 298 - Graduate Research Report

1-4 unit(s)

Graduate Research Report.

Repeatable for credit.

Prerequisite(s): PHYS 297 and Instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

PHYS 299 - Master's Thesis

1-4 unit(s)

Prerequisite(s): Advancement to candidacy for the master's degree. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

PHYS 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in Chem 299, Master's Thesis
Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Political Science

POLS 1 - American Government

3 unit(s)

Institutions and processes of American government and democracy; the U.S. Constitution and California state and local government.

Satisfies American Institutions US2: US Constitution + US3: California Government.

Grading: Letter Graded

Note(s): Satisfies American Institutions requirements in American and California government.

POLS 2 - Introduction to Comparative Politics

3 unit(s)

Comparative analysis of different kinds of political systems; their political institutions, processes and policies; the environments in which they occur and their consequences.

Satisfies D: Social Sciences.

Grading: Letter Graded.

POLS 3 - Introduction to Political Thought

3 unit(s)

Thinking critically about the classic problems of politics; learning how to interpret, discuss and write about historical and contemporary political thought.

Satisfies C2: Humanities.

Grading: Letter Graded

POLS 4 - Introduction to International Relations

3 unit(s)

Introductory survey of major topics in international relations, including global, national and individual causes of war and peace, international cooperation, north-south relations and political economy.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Sustainability Related - SDG 17: Partnerships for the Goals

POLS 15 - Essentials of U.S. & California Government

3 unit(s)

Treatment of essentials of U.S. and California government. Satisfies the American Institutions (US23) and the GE Area D: Social Sciences requirements.

Satisfies D + US23: Social Sciences and US Constitution and California Government.

Grading: Letter Graded.

POLS 16 - Power and Ideas in American Politics

3 unit(s)

Study of power, institutions, and creative ideas in American political thought. Engages work of intellect and imagination in political documents, essays, speeches, letters, short works of fiction, poems, and manifestos.

Satisfies C2: Humanities + US2: US Constitution + US3: California Government.

Grading: Letter Graded

POLS 20 - Controversial Legal Issues

3 unit(s)

Basic concepts in critical thinking as demonstrated in legal reasoning and analysis of contemporary legal issues possibly including abortion, drug testing, offensive speech, affirmative action, gender and sexual preference discrimination, school prayer and pornography.

Satisfies A3: Critical Thinking and Writing.

Prerequisite(s): Completion of GE Area A2 with a grade of C- or better.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

POLS 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

POLS 100M - Political Inquiry

4 unit(s)

Introduction to the scope and methods of political science. Beginning with research design, measurement, and ethical considerations, and including a variety of research methods including surveys, experiments,

interviews, fieldwork, content analysis, and an introduction to quantitative and qualitative analysis.

Grading: Letter Graded

Note(s): Should be taken junior year.

POLS 100W - Writing Workshop

3 unit(s)

Writing skills for majors in political science. Basic materials; research; memos and research reports, press releases, analyses of political/electoral behavior, political speeches.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

POLS 101 - American Government for Teachers

3 unit(s)

Introduction to the institutions and processes of American and California governments with emphasis on meeting CCTC Teacher Preparation Standards. Topics include U.S. Constitution, federalism, political participation, civil rights and liberties, Congress, the presidency.

Grading: Letter Graded

POLS 102 - State Government and Politics

4 unit(s)

This course examines the politics and institutions of U.S. state governments. The structure and powers of state legislatures, governors, and court systems are analyzed. The effect of states' racial, ideological, and economic characteristics on public policy is also explored.

Satisfies American Institutions US3: California Government.

Grading: Letter Graded

Note(s): Satisfies American Institutions requirement in California government.

POLS 103 - Local Government and Politics

4 unit(s)

Offers a theoretical and practical study of local politics and government. The structure, role, and functions of city and county governments are examined. Students gain knowledge of the resources and skills required for effective citizenship in their communities.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with URBP 103. Political Science is responsible for scheduling.

POLS 105 - Congress

4 unit(s)

Examines politics and policymaking in the U.S. Congress. Topics include party leadership, interest groups in Congress, congressional committees, political representation, redistricting and congressional elections, party polarization, and the process of how a bill becomes law.

Grading: Letter Graded

POLS 106 - The United States Presidency

4 unit(s)

Examination of the American presidency. Topics include the historical emergence of the presidency as an institution, the formal and informal powers of the modern presidency, and the tension between the presidency and other federal institutions, most notably Congress.

Grading: Letter Graded

POLS 108 - Political Participation

4 unit(s)

Explores various forms of political participation including voting, community engagement, and social change. Includes consideration of the roles that socialization, media, campaign and elections, and other social and technological factors play in shaping citizen participation.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

POLS 109 - Women and Politics

4 unit(s)

Examines social movement strategies and theories of gender and power employed by differently situated women. Includes critical examination of the relationship between sex and gender, and intersections of race, class, gender, law and nation.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

POLS 110 - Race and Politics

4 unit(s)

Examines race and politics in America by focusing on political participation and social movement strategies among minoritized groups. Explores theories of equality, diversity, and justice, and the changing legal relationship between states and citizens.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

POLS 111 - Political Movements

4 unit(s)

Strategies and tactics of past and current US political movements. Local, state, and national government policy making processes and how they are influenced and shaped by organizing campaigns. Students plan, organize, and implement their own campaigns.

Grading: Letter Graded.

POLS 114 - Introduction to Public Administration

3 unit(s)

A broad overview of the theory and practice of public policy analysis and management in the modern context. Topics include aspects of organizational theory, leadership, budgeting, finance, personnel management, problem formulation, analysis and decision making in a political environment.

Grading: Letter Graded

POLS 120 - Law and Society

3 unit(s)

Social and philosophical foundations of law and legal systems and development of legal institutions in various cultures. Anglo-American law and administration of justice in the U.S. emphasized.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

POLS 121A - Constitutional Law: Institutional Powers

4 unit(s)

Examines the U.S. Supreme Court, its processes, and the role it plays in the American governing system. Examination of judicial policy making through cases on judicial review, separations of powers, federalism, commerce, and tax and treaty powers.

Grading: Letter Graded

POLS 121B - Constitutional Law: Civil Liberties

4 unit(s)

Explores the constitutional basis for civil liberties in America. Application of methods of constitutional analysis to cases involving freedom of speech, religion, and the press. Examination of personal privacy rights including abortion, gun rights, and criminal procedures.

Grading: Letter Graded

POLS 121C - Constitutional Law: Civil Rights

4 unit(s)

Explores the constitutional basis for civil rights in America. Application of methods of constitutional analysis to cases involving discrimination, equal protection, and due process. Examination of leading cases related to voting rights, affirmative action, criminal justice, and other issues

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

POLS 122 - Judicial Politics

4 unit(s)

Examines the effects of political forces on judicial behavior. Includes consideration of the roles of interest groups, public opinion, methods of selecting judges, and the importance of judges' personal political beliefs, on judicial decisions.

Grading: Letter Graded

POLS 124 - Introduction to Environmental Law

3 unit(s)

Development, interpretation, application and enforcement of environmental laws, regulations and legal policies by legislatures, courts, administrative agencies and citizens. Examination of air and water quality, hazardous materials, workplace, land use and wetlands regulation, international, ethical and efficacy issues.

Prerequisite(s): ENVS 1 or Instructor Consent.

Grading: Letter Graded

Cross-listed with ENVS 124. Environmental Studies is responsible for scheduling.

POLS 130 - American Public Policy

4 unit(s)

Introduces students to the public policy making process in the American governing system. The politics of agenda setting, policy formulation, and policy implementation are examined. Students learn to analyze and evaluate public policy outcomes.

Grading: Letter Graded

POLS 135 - U.S. Environmental Policy

3 unit(s)

Inquiry focuses on environmental pollution, public attitudes toward environmental problems, interest groups involved in formulation of policy, and the role of government policy makers in shaping the environmental agenda.

Grading: Letter Graded

Cross-listed with ENVS 135. Political Science is responsible for scheduling.

POLS 141 - Politics of Post-Communist Countries

4 unit(s)

Political development and change in countries that have transitioned from communist or socialist systems such as Russia, Eastern Europe, Central Asia, and the Caucasus; internal politics of these countries and relations with other countries.

Grading: Letter Graded

POLS 142 - African Politics

4 unit(s)

Basic concepts, theoretical perspectives, and information to understand the evolution of contemporary African states. Begins with a study of colonialism, and proceeds to nationalism, personalistic and military rule, development, democratization, and inter-state and civil war.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with AFRS 142. Political Science is responsible for scheduling.

POLS 144 - Middle Eastern Politics

4 unit(s)

Study of unfolding events in the Middle East. Themes include: the failure of democratic movements, nuclear proliferation and terrorism, US foreign policy towards the region, the Israel-Palestine conflict, urbanization, gender and human rights.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with JWSS 144 / MDES 144. Political Science is responsible for scheduling.

POLS 145 - Asian Politics

4 unit(s)

Study of unfolding events in Asia. Themes include: the Asian economic 'miracle,' the implications of China's rise for international security, nuclear proliferation and terrorism, and sustainability; specifically, energy, environment and human rights.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ASIA 145. Political Science is responsible for scheduling.

Sustainability Related - SDG 17: Partnerships for the Goals

POLS 146 - Latin American Politics

4 unit(s)

Survey of the political systems of Latin American countries. Places Latin American countries in a global perspective. Major themes include: civil-military relations, democratization, economic development, social

movements, and foreign relations both within and outside Latin America.

Grading: Letter Graded

POLS 147 - Globalization

4 unit(s)

Considers the impact of economic and political globalization, focusing primarily on nations in Latin America, Asia and Africa. Issues include the effects of multinational production, migration, aid, international institutions and humanitarian intervention.

Grading: Letter Graded

Sustainability Focused - SDG 17: Partnerships for the Goals

POLS 148 - Nationalism and Comparative Political Cultures

4 unit(s)

Comparative analysis of the origin, nature, and impact of nationalism on the politics of Western and non-Western states. Students examine cases where nationalism resulted in conflict, and those in which it supports a stable nation-state. Completion of POLS 2, POLS 3 and POLS 4 highly recommended before enrolling.

Grading: Letter Graded

POLS 150 - War and Peace

3 unit(s)

Fundamental human questions about causes of war, definitions of peace and approaches toward achieving peace from perspectives of historical and contemporary thinkers, including philosophers, political leaders, military strategists and diplomats.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Not counted as a core course in the international relations subfield.

POLS 152A - International Organizations and NGOs

4 unit(s)

Examines the structures and functions of different types of international organizations (such as the UN, NATO, regional organizations, and non-governmental organizations), and their role in maintaining international peace and security, promoting human rights and economic development, and protecting the environment.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

POLS 152B - Model United Nations

4 unit(s)

Structure and operations of the United Nations explored and analyzed through participation in annual U.N. simulation.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): POLS 152A

Grading: Credit/No Credit

POLS 153 - European Union

4 unit(s)

Surveys and analyzes the historical evolution, the institutions, as well as the process of policy making in the European Union. Examines key policy areas: agricultural, social, economic, environmental, and foreign policy.

Grading: Letter Graded

Sustainability Related - SDG 17: Partnerships for the Goals

POLS 154 - U.S. Foreign Policy: Formulation and Administration

4 unit(s)

Consideration of the factors that shape American foreign policy making, including ideology, organization, as well as partisanship, interest groups, and public opinion. Issues considered include relations with the Middle East and Russia, and economic diplomacy.

Grading: Letter Graded

POLS 155 - The Wealth of Nations

4 unit(s)

This course examines how states, international and multinational bodies, and global social movements shape trade, financial, and labor relations. Topics include: international trade and protectionism, the International Monetary Fund and the World Bank, regional integration, and transnational corporations.

Grading: Letter Graded

POLS 157 - International Security

4 unit(s)

Examines theories of international security, debates over sources, conduct and termination of conflict, including but not limited to inter-state war; security decision-making; military and economic strategy; crisis management; regional security; intelligence; new and complex security issues along the war-peace continuum.

Grading: Letter Graded

POLS 160A - Classical Political Thought

3 unit(s)

Critical examination of the foundations of Western political thought and the continuing influence of these foundations; sources chosen from among a variety of pre-Renaissance traditions and include writers such as Plato, Aristotle, Augustine and Aquinas.

Grading: Letter Graded

POLS 160B - Modern Political Thought

3 unit(s)

The basis of the modern state and society as interpreted by political thought between (and including) the Renaissance and the French Revolution; this key period includes writers such as Machiavelli, Hobbes, Locke and Rousseau.

Grading: Letter Graded

POLS 160C - Recent Political Thought

3 unit(s)

The roots of today's politics in the ideas and writers of the nineteenth and twentieth centuries; sources drawn from a variety of recent traditions such as democratic theory, Marxism, political psychology and political sociology.

Grading: Letter Graded

POLS 163 - American Political Thought

3 unit(s)

Critical examination of the origins and development of American politics as seen through theorists, concepts and forces which have shaped American political consciousness.

Grading: Letter Graded

POLS 170V - American Politics in Global Perspective

3 unit(s)

A survey of U.S. and California political institutions and culture in comparison with political institutions and cultures outside the U.S., as well as American Institutions Requirement: US2 and US3.

Satisfies SJSU Studies V + US23: Cultures and Global Understanding. + US Constitution and California Government.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

POLS 177 - Political Psychology

4 unit(s)

Introduction to the interdisciplinary field of political psychology, with a focus on topics including personality and leadership, political cognition, social identity, emotions and attitudes, voting and political behavior, racism and ethnocentrism, ethnic conflict and genocide, nationalism, terrorism, and conflict resolution.

Prerequisite(s): POLS 1 (or other US2-3), PSYC 1, or instructor consent

Grading: Letter Graded

Cross-listed with PSYC 177. Political Science is responsible for scheduling.

Sustainability Related - SDG 10: Reduced Inequalities

POLS 180 - Individual Studies

1-4 unit(s)

Individual study for advanced work in areas where no courses are offered.

Prerequisite(s): Appropriate courses, instructor consent and department chair consent.

Grading: Credit/No Credit

POLS 181 - Internships

4 unit(s)

Offers students the opportunity to connect knowledge of politics, government, and policy making learned in the classroom to real life application through internships with elected officials, non-profit organizations, government agencies, or political campaigns.

Prerequisite(s): POLS 100W and instructor consent.

Grading: Credit/No Credit

POLS 181C - Internship Capstone

4 unit(s)

Application of knowledge of politics, government, and policy making through internships with elected officials, non-profit organizations, government agencies, or political campaigns. Students complete a major capstone paper.

Prerequisite(s): POLS 100W and POLS 100M, and instructor consent. A minimum grade of C- is required to fulfill the BA Political Science capstone requirement.

Grading: Letter Graded

POLS 184 - Directed Reading

1-4 unit(s)

Program of reading and writing created through student/faculty consultation in areas not covered by other courses. Course is not repeatable for credit.

Prerequisite(s): Appropriate courses, instructor consent and department chair consent.

Grading: Letter Graded

POLS 190 - Senior Seminar

4 unit(s)

Culminating experience for the political science major. Seminar class with significant participation required. Specific course topics vary each semester.

Repeatable for credit.

Prerequisite(s): POLS 100W and POLS 100M, or instructor consent. A minimum grade of C- is required to fulfill the BA Political Science capstone requirement.

Grading: Letter Graded

POLS 190H - Honors Thesis

1 unit(s)

Preparation and writing of an original project.

Prerequisite(s): Senior standing. 3.2 overall GPA and 3.5 GPA in the major and instructor consent.

Corequisite(s): POLS 190.

Grading: Letter Graded

POLS 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

POLS 199 - Current Political Issues

1-3 unit(s)

Major political issues of the day. Topics vary each semester. Course is repeatable for credit with instructor consent.

Grading: Letter Graded

POLS 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Portuguese

PORT 1A - Elementary Portuguese I

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Grading: Letter Graded

PORT 1B - Elementary Portuguese II

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): PORT 1A (or equivalent).

Grading: Letter Graded

PORT 20A - Intermediate Portuguese

3 unit(s)

Reading, sentence structure and idiomatic usage in conversation and simple essays.

Prerequisite(s): 2 semesters of college Portuguese (or equivalent or SJSU placement exam).

Grading: Letter Graded

PORT 20B - Intermediate Portuguese

3 unit(s)

A continuation of PORT 20A.

Prerequisite(s): 3 semesters of college Portuguese (or equivalent).

Grading: Letter Graded

PORT 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PORT 101A - Advanced Portuguese

3 *unit(s)*

Reading, discussion, morphology, syntax and composition.

Prerequisite(s): Four semesters of college Portuguese (or equivalent).

Grading: Letter Graded

PORT 101B - Advanced Portuguese

3 *unit(s)*

Reading, discussion, morphology, syntax and composition.

Prerequisite(s): Four semesters of college Portuguese (or equivalent).

Grading: Letter Graded

PORT 102A - Intro to Portuguese-Speaking Cultures

3 *unit(s)*

Introduction to the culture and civilization of the Portuguese-speaking world, including geography, history, customs, and literature of the different countries. Taught in English.

May be repeated for credit for up to 9 units when content changes.

Prerequisite(s): Four semesters of college Portuguese (or equivalent).

Grading: Letter Graded

PORT 102B - Brazilian Culture

3 *unit(s)*

History, geography, fine art and daily life in Brazil.

Prerequisite(s): Upper division standing

Grading: Letter Graded

PORT 180 - Individual Studies in Portuguese

1-3 *unit(s)*

By arrangement.

Prerequisite(s): Upper division standing in Portuguese (or equivalent) and instructor consent.

Grading: Credit/No Credit

PORT 192 - International Program Studies

1-6 *unit(s)*

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Psychology

PSYC 1 - Introduction to Psychology

3 unit(s)

Psychology is the scientific study of behavior and mental processes. The content focuses on the exploration of major psychological theories and concepts, methods, and research findings in psychology. Topics include the biological bases of behavior, perception, cognition and consciousness, learning, memory, emotion, motivation, development, personality, social psychology, psychological disorders and therapeutic approaches to treatment, and applied psychology.

Satisfies D: Social Sciences.

Grading: Letter Graded.

PSYC 2Q - Identity Development and Prejudice

3 unit(s)

This seminar is designed to facilitate the transition to the university smoothly with a view to an increased understanding of one's cultural identity; and exploring mechanisms and consequences of prejudice and discrimination in American cultural groups.

Satisfies E: Human Understanding & Development.

Prerequisite(s): First term freshmen only.

Grading: Letter Graded

Note(s): All courses with a 'Q' suffix are designated as First Year Experience courses.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

PSYC 18 - Introduction to Research Methods

3 unit(s)

Psychological research methods and design (experimental, quasi-experimental [correlational], and descriptive investigations) covering observation, instrumentation, and the collection, analysis, interpretation, and reporting of research data as illustrated through a review of original research in a variety of the subdisciplines of psychology.

Prerequisite(s): PSYC 1, and STAT 95.

Grading: Letter Graded

PSYC 30 - Introductory Psychobiology

3 unit(s)

Biological approaches to understanding behavior: evolutionary, genetic, neural and hormonal influences on normal and abnormal behavior.

Prerequisite(s): BIOL 21 or BIOL 65.

Grading: Letter Graded

PSYC 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PSYC 100W - Writing Workshop

3 unit(s)

Practice in improvement of writing skills appropriate to the broad field of psychology, including essays, reports and scholarly communication.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): PSYC 1; STAT 95 or senior standing; A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Allowed Declared Majors: Psychology Majors/Minors and Behavioral Science Majors only. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

PSYC 102 - Psychology of Childhood

3 unit(s)

Psychological development of children from conception to middle childhood emphasizing normative (typical) development in the context of cognitive, socioemotional, biological, and cultural processes.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 105 - Special Topics in Developmental Psychology

3 unit(s)

Intensive examination of current research and theory in a specialized area of developmental psychology. Course is repeatable for credit when course content changes.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): PSYC 102 or PSYC 112 or PSYC 114 or equivalent

Grading: Letter Graded

PSYC 107 - Psychology of Women

3 unit(s)

Sex-role development of women in terms of bio-social factors involved in intellectual and personal-emotional functions. Psychological theory and research.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

Cross-listed with WGSS 107. Psychology is responsible for scheduling.

PSYC 110 - Adult Psychopathology

3 unit(s)

Nature, causes, assessment, and treatment of behavioral, emotional, and personality problems of adults. Emphasis on psychological, social, and biological determinants of human behavioral and psychological disturbance.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 112 - Psychology of Adolescence

3 unit(s)

Psychological development of adolescents' and young (emerging) adults emphasizing normative (typical) development in the context of cognitive, socioemotional, biological, and cultural processes.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 114 - Psychology of Aging

3 unit(s)

Psychological development of middle-aged and older adults emphasizing normative (typical) development in the context of cognitive, socioemotional, biological, and cultural processes. Course content also includes age-related health problems and their prevention.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

Cross-listed with GERO 114. Psychology is responsible for scheduling.

PSYC 117 - Psychological Tests and Measures

3 unit(s)

Test and questionnaire construction, evaluation and interpretation applied to intelligence and ability tests, personality and adjustment questionnaires, ratings and behavioral observation techniques.

Prerequisite(s): STAT 95.

Grading: Letter Graded

PSYC 118 - Advanced Research Methods in Psychology

3 unit(s)

Descriptive, correlational, quasi-experimental, and experimental approaches: design, methodology, and analysis. Experience designing, conducting, analyzing, and presenting (verbal and written) research findings. Topics include: hypothesis testing, validity, reliability, scales of measurement, questionnaire development, power, statistical significance, and effect size.

Prerequisite(s): Lower division GE complete; STAT 95, PSYC 18, PSYC 100W with a "C" or better (or departmental approval), Upper division standing, Psychology or Behavioral Science majors only.

Grading: Letter Graded

PSYC 120 - Advanced Research Methods and Design

4 unit(s)

Descriptive, correlational, quasi-experimental, and experimental approaches: design, methodology, and analysis. Experience designing, conducting, analyzing, and presenting (verbal and written) research findings. Topics will include: hypothesis testing, validity, reliability, scales of measurement, questionnaire development, power, statistical significance, and effect size.

Misc/Lab: Lecture 3 hours/activity 2 hours.

Prerequisite(s): lower division GE complete; STAT 95; PSYC 100W with 'C' or better (or department approval); Upper Division; Psychology or Behavioral Science Major

Grading: Letter Graded

PSYC 121A - Advanced Research Methods Social/Personality Laboratory

2 unit(s)

Advanced treatment of research approaches used in social and personality psychology. The course focus is shared between traditional laboratory and fieldwork experimental designs and methods. Data collection and statistical data analysis facilitate experiential learning.

Lecture 1 hour/lab 3 hours.

Prerequisite(s): PSYC 100W, and PSYC 118 or PSYC 120, and PSYC 139 or PSYC 154. Upper division standing. Psychology majors only.

Grading: Letter Graded

Note(s): Instructor consent may allow PSYC 121A and PSYC 120 concurrently on a space-available basis.

PSYC 121B - Advanced Research Methods: Cognition/Perception

2 unit(s)

Advanced treatment of research approaches used in cognition and/or perception through traditional laboratory experimental designs and methods. Laboratory-based data collection and analysis facilitate experiential learning.

Lecture 1 hour/lab 3 hours.

Prerequisite(s): PSYC 100W; and either PSYC 135, PSYC 155, or PSYC 158; and either PSYC 118 or PSYC 120.

Grading: Letter Graded

Note(s): Instructor consent may allow PSYC 121B and PSYC 120 concurrently on a space-available basis.

PSYC 121C - Advanced Research Methods: Clinical Laboratory

2 unit(s)

Advanced research methods used in clinical research. The primary focus is on traditional field and laboratory research methodologies. Data collection and statistical data analysis facilitate experiential learning.

Prerequisite(s): PSYC 100W, and PSYC 118 or PSYC 120, and PSYC 110 or PSYC 142.

Grading: Letter Graded

Note(s): Note(s): Instructor consent may allow PSYC 121C and PSYC 120 concurrently on a space-available basis.

PSYC 121E - Advanced Research Methods: Psychophysiology Lab

2 unit(s)

Intensive experiential introduction to applied laboratory work in human psychophysiology and hormonal influences on human behavior. Focus on experimental methodology.

Prerequisite(s): PSYC 100W and PSYC 118 or PSYC 120 and PSYC 129

Grading: Letter Graded

PSYC 126 - Drugs, Brain and Behavior

3 unit(s)

Survey of psychoactive drugs, including prescription and street drugs; social, behavioral and physiological effects of drugs; neural mechanisms of drug action; history of drug use.

Prerequisite(s): PSYC 30 or 3 units of biology.

Grading: Letter Graded

Cross-listed with PH 126. Psychology is responsible for scheduling.

PSYC 129 - Neuroscience

3 unit(s)

Principles of brain organization and function underlying behavior. Topics include neuroanatomy and physiology of language, vision, sexual behavior, memory and abnormal behavior.

Prerequisite(s): Either PSYC 30 and 3 units of biology, or 9 units of biology.

Grading: Letter Graded

Note(s): Not acceptable as an elective in the Biology major.

Cross-listed with BIOL 129. Psychology is responsible for scheduling.

PSYC 135 - Cognition

3 unit(s)

The activity of knowing: acquisition, organization and use of knowledge. Processes involved in that activity, including perception, memory, thinking and language.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 136 - Cognitive Science

3 unit(s)

Focuses on the study of the mind and the nature of intelligence from interdisciplinary perspectives including psychology, computer science, philosophy, linguistics, mathematics, and neuroscience. Topics typically include the history of computer-based approaches to artificial intelligence and expertise, human cognition, neuroscience, language acquisition, and computational approaches to modeling cognitive processes.

Prerequisite(s): PSYC 1 and PSYC 135.

Grading: Letter Graded

PSYC 139 - Psychology of Personality

3 unit(s)

Current approaches to the study of personality and personality processes.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 142 - Child Psychopathology

3 unit(s)

Nature, causes, assessment, and treatment of behavioral, cognitive, and emotional problems of children and adolescents. Emphasis on psychological, social, and biological determinants of human behavioral and psychological disturbance.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 145 - Community Mental Health

3 unit(s)

Comprehensive analysis of community mental health using a socio-ecological framework. Intersection of race, socioeconomic status, gender, sexual orientation, and mental health is examined. Emphasis is on prevention and recovery.

Prerequisite(s): Any 100W or instructor consent.

Grading: Letter Graded

Cross-listed with PH 145 / SOCI 145. Public Health and Recreation is responsible for scheduling.

PSYC 150 - Educational Psychology

3 unit(s)

Development of individuals and how they learn. Intelligence, emotions, interests, social relations as related to development and learning.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

Note(s): No credit for those who have taken EDSC 173.

PSYC 153 - Psychology in the Courtroom

3 unit(s)

Role of psychology in the legal system: legal procedure and adversary system, jury selection, jury decision-making, eyewitness testimony, mental health law, criminal responsibility and legal insanity, expert psychological testimony, role of forensic psychologists.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 154 - Social Psychology

3 unit(s)

Theories, problems and issues in the study of human social behavior.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 155 - Human Learning

3 unit(s)

Memory, forgetting, concept formation, language learning, reinforcement and related topics. Traditional learning concepts, theories and findings with reference to contemporary classroom management, behavior modification and other applications.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 156 - Applied Behavior Analysis

3-6 unit(s)

Survey of applications of behavioral principles to problems of clinical and social importance. Topics include data-based decision making, approaches to promoting skill acquisition, and strategies for assessing and reducing problem behavior.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

PSYC 158 - Perception

3 unit(s)

Empirical and theoretical approaches to the psychology of perception with an emphasis on vision. Topics include the perception of form, color, depth and motion as well as the effects of attention and experience.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 160 - Clinical Psychology

3 unit(s)

Survey of clinical psychology as a profession. Emphasis placed on training models, specializations within the field, the scientific study of psychological interventions, and the graduate school admissions process for masters and doctoral level psychotherapists.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 165 - Theory and Methods of Counseling

3 unit(s)

A survey of theories focused on helping and behavior change. Course covers both historical and contemporary psychotherapeutic interventions found in clinical and counseling psychology and evidence based practice approaches in psychotherapy.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 167 - Sports Psychology

3 unit(s)

Psychological aspects of sports, including the value of sports, psychological factors involved in competitive as well as non-competitive athletic activities and the role of sports psychologists.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

Cross-listed with KIN 167. Kinesiology is responsible for scheduling.

PSYC 170 - Industrial and Organizational Psychology

3 unit(s)

Application of psychological theory, research and methodology to the work environment. Topics covered include leadership, power, group processes, motivation, satisfaction and issues in personnel psychology.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 173 - Human Factors

3 unit(s)

Human psychology and physiological characteristics and methods for taking these into account in designs

and development of human-machine systems. Current human factor engineering efforts in lab, design process and operational environment.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 175 - Management Psychology

3 unit(s)

Theory and practice of psychology in organizations and management. Topics include learning, motivation, perception, attitudes, personality, stress, groups, culture, careers, communication, leadership, politics, conflict, cooperation, decision-making and organizational change.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 177 - Political Psychology

4 unit(s)

Introduction to the interdisciplinary field of political psychology, with a focus on topics including personality and leadership, political cognition, social identity, emotions and attitudes, voting and political behavior, racism and ethnocentrism, ethnic conflict and genocide, nationalism, terrorism, and conflict resolution.

Prerequisite(s): POLS 1 (or other US2-3), PSYC 1, or instructor consent.

Grading: Letter Graded

Cross-listed with POLS 177. Political Science is responsible for scheduling.

Sustainability Related - SDG 10: Reduced Inequalities

PSYC 180 - Individual Studies

1-4 unit(s)

Research project in psychology.

Prerequisite(s): 12 units of psychology and instructor and department chair consent.

Grading: Credit/No Credit

PSYC 184 - Directed Reading

1-4 unit(s)

Directed reading on a specific psychological topic.

Prerequisite(s): 12 units of psychology and instructor and department chair consent.

Grading: Credit/No Credit

PSYC 186 - Psychology Field Work

1-4 unit(s)

Supervised field work in a selected area of psychology. Course is repeatable for 4 unit maximum.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Instructor and department chair consent.
Grading: Credit/No Credit

PSYC 190 - Current Issues Capstone

3 unit(s)

Integrative survey of current issues in psychology, how they developed and likely future directions. Completion of the research methods requirement prior to enrollment in this course is recommended.

Prerequisite(s): PSYC 100W and senior standing.
Pre/Corequisite(s): PSYC 118 or PSYC 120
Grading: Letter Graded

PSYC 191 - The Psychology of Prejudice

3 unit(s)

Provides an examination of psychological theory and research related to prejudice and discrimination from the perspectives of both the holders and targets of prejudice. Includes individual and small group exercises to provide experiential learning.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.
Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

PSYC 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PSYC 193 - Behavioral Science in Practice

3 unit(s)

Capstone workshop for behavioral science majors. Students assess methods and knowledge of anthropology, psychology and sociology, and synthesize them by reflecting upon case studies of individual, organizational, community, and global issues. Emphasis is on cooperative learning, reflection and synthesis of skills and knowledge.

Prerequisite(s): Senior standing. Allowed Declared Major: Behavioral Science or Behavioral Science double major.

Grading: Letter Graded

Cross-listed with ANTH 193 / SOCI 193. Anthropology is responsible for scheduling.
Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

PSYC 194 - Cultural Psychology

3 unit(s)

Designed for students who have some background and interest in multicultural and cross-cultural issues. Introduction to how social group membership influences cognition, emotion, identity/the self, intergroup processes, attitudes, and related processes.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

PSYC 195 - Honors Seminar in Psychology

3 unit(s)

Intensive examination of background and current status of student-selected problems.

Prerequisite(s): at least 18 units of PSYC/STAT, PSYC 100W, PSYC 118 or PSYC 120, overall PSYC/STAT GPA of 3.5, Senior Standing

Grading: Letter Graded

PSYC 199 - Senior Honors Thesis

3 unit(s)

Supervised thesis open only to exceptional senior psychology majors.

Prerequisite(s): Senior or graduate standing and instructor consent.

Grading: Mandatory Credit/No Credit/RP

PSYC 200 - Seminar in Personality Theory

3 unit(s)

A survey of contemporary approaches to personality study.

Prerequisite(s): PSYC 139 (or equivalent) plus a total of nine semester hours of upper division psychology courses.

Grading: Letter Graded

PSYC 203A - Clinical Assessment I

3 unit(s)

An in-depth introduction to objective, projective and behavioral assessment techniques used in the clinical evaluation of the behavior and functioning of adults, children and families.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): PSYC 117 (or equivalent).

Grading: Letter Graded

Note(s): MS program priority. This course satisfies graduate-level GWAR in this master's program.

PSYC 204 - Seminar in Developmental Psychology

3 unit(s)

An examination of significant theories, perspectives, and research in developmental psychology.

Prerequisite(s): PSYC 102 (or equivalent).

Grading: Letter Graded

PSYC 208 - Family Assessment and Intervention

3 unit(s)

An interdisciplinary exploration of how therapists can analyze and change interpersonal dynamics in couples and families.

Grading: Letter Graded

PSYC 209 - Psychology of Contemporary Families

3 unit(s)

An overview of current family issues faced by psychotherapists in clinical settings. Emphasis will be placed on identification and conceptualization of these issues from a psychological perspective, stressing integration of issues into clinical practice. MS Clinical program priority.

Prerequisite(s): PSYC 208.

Grading: Letter Graded

PSYC 210 - Advanced Psychopathology

3 unit(s)

Advanced course to provide knowledge and experience in the classification and treatment of disorders of childhood, adolescence and adulthood as they are identified in schools, family interactions and worksite settings. Critical review of research related to the evaluation of treatment strategies.

Prerequisite(s): PSYC 110.

Grading: Letter Graded

Note(s): MS program priority.

PSYC 211 - Child Psychopathology

3 unit(s)

An overview on the nature, assessment and treatment of Child Psychopathology. Emphasis will be placed on understanding DSM-IV diagnoses from a developmental perspective. Objective methods of assessment and empirically supported treatments will be covered.

Grading: Letter Graded

PSYC 212 - Lifespan Development

3 unit(s)

Psychological, biological and social development throughout the life cycle. Interdisciplinary lecture course includes infancy, childhood, adolescence, young adulthood, middle age and old age. Topics include theories, research, influences, changes, problems and patterns of human development.

Grading: Letter Graded

Note(s): MS program priority.

PSYC 219 - HCI for Cyber Security

3 unit(s)

The course covers HCI in cyber security that include: authentication and access control, trust, user privacy and data protections, cyber security in social networking, data protection and security in healthcare, cyber security in eCommerce, mobile, computing & cloud computing, compliance and regulation, visualization tools and techniques in cyber security and privacy.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded.

Cross-listed with ISE 219. Industrial and Systems Engineering is responsible for scheduling.

PSYC 220 - Seminar in Experimental Psychology

3 unit(s)

Applications of experimental method to current problems in psychology. Individual design and experimental work required.

Prerequisite(s): PSYC 120A.

Grading: Letter Graded

PSYC 222 - Gender and Ethnic Issues in Counseling and Therapy

3 unit(s)

Theoretical and practical understanding of gender and ethnic issues in clinical practice, including issues arising from differing socialization, psychological structures, values and cultural assumptions that may affect therapeutic intervention within individuals, couples and families.

Grading: Letter Graded

Note(s): MS program priority.

PSYC 224A - Clinical Psychology Practicum I

3 unit(s)

Supervised experience in the treatment of behavioral and emotional problems of individuals and families.

Prerequisite(s): Same as PSYC 223A.

Corequisite(s): PSYC 223A.

Grading: Letter Graded

Note(s): MS program priority.

PSYC 224B - Clinical Psychology Practicum II

3 unit(s)

Advanced supervision in the treatment of behavioral and emotional problems of individuals and families.

Prerequisite(s): Same as PSYC 224A.

Corequisite(s): PSYC 223B .

Grading: Letter Graded

Note(s): MS program priority.

PSYC 225 - Advanced Group Dynamics

3 unit(s)

Advanced study of the dynamics of small group interaction. Limited supervised training in group facilitation techniques.

Prerequisite(s): PSYC 125 (or equivalent).

Grading: Letter Graded

Note(s): MS program priority.

PSYC 226 - Addictions and Treatment

3 unit(s)

Advanced course in assessment, diagnosis, and treatment, and prevention of substance abuse and dependence and co-occurring disorders in multiple settings. Critical review of research related to the evaluation of treatment strategies are provided from recovery models, family, and individual perspectives.

Prerequisite(s): PSYC 203A and graduate standing in MS psychology program

Grading: Letter Graded

PSYC 228 - Professional Ethics for Psychologists

3 unit(s)

Consideration of ethical and legal issues related to the professional application of psychology. Designed particularly for students involved in field work.

Grading: Letter Graded

Note(s): MS program priority.

PSYC 230 - Seminar in Physiological Psychology

3 unit(s)

An advanced consideration of the neurophysiological correlates of behavior.

Prerequisite(s): PSYC 129 (or equivalent).

Grading: Letter Graded

PSYC 232 - Clinical Psychopharmacology

3 unit(s)

Prepares counseling professionals to understand aspects of drug use, mechanisms of change and clinical outcomes.

Prerequisite(s): PSYC 126 or equivalent.

Grading: Letter Graded

PSYC 235 - Seminar in Cognitive Psychology

3 unit(s)

Theories and current research in cognitive psychology with emphasis on components of cognitive processing from pattern recognition to problem solving. Substantial emphasis on cognitive development and mechanisms of cognitive change.

Prerequisite(s): Graduate standing.

Grading: Letter Graded

PSYC 237 - Psychology of Language

3 unit(s)

Selected topics in the cognitive mechanisms underlying spoken language processing. Topics include the perception, production, acquisition, and evolution of language.

Prerequisite(s): PSYC 135, PSYC 155, LING 101, or LING 161 (or equivalent).

Grading: Letter Graded

PSYC 240 - Research Design and Applied Psychometrics

3 unit(s)

Advanced introduction to issues in psychological research (experimental, quasi-experimental and survey research), measurement, and survey construction (scale development, item analysis, reliability, validity).

Prerequisite(s): Instructor consent.

Grading: Letter Graded

PSYC 243 - Field Work in Psychology

1-6 unit(s)

Supervised field work experience in outside agency settings. Open through consultation only to students in MS programs.

Course may be repeated for credit for up to 36 units.

Grading: Credit/No Credit

PSYC 249 - Field Work in Industrial/Organizational Psychology

1-6 unit(s)

Supervised experience applying psychological and organizational theory and practice in business, industrial and other organizational settings.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

PSYC 254 - Social Psychology Seminar

3 unit(s)

Theoretical and practical approaches to the understanding of human behavior within a social context.

Prerequisite(s): PSYC 154 (or equivalent).

Grading: Letter Graded

PSYC 255 - Seminar in Learning

3 unit(s)

Current problems in learning with primary emphasis on learning theory.

Prerequisite(s): PSYC 155 (or equivalent).

Grading: Letter Graded

PSYC 256 - Seminar in Perception

3 unit(s)

Selected issues in visual sensation and perception. Topics include the perception of color, form, depth and motion. Emphasis on the relationship of perception to sensory physiology.

Prerequisite(s): PSYC 158 (or equivalent).

Grading: Letter Graded

PSYC 258 - Methods of Psychotherapy

3 unit(s)

Survey of the theoretical background and practical application of various approaches to psychotherapy.

Prerequisite(s): PSYC 139.

Grading: Letter Graded

Note(s): MS program priority.

PSYC 260 - Crisis and Trauma Counseling

3 unit(s)

Advanced course on trauma including strategies for assessing, managing, short and long term- treatment for acute and chronic stress reactions. Empirically supported risk and protective factors, and evidence-based treatments are covered. Resilience, personal, multidisciplinary, and community perspectives are

emphasized.

Prerequisite(s): PSYC 203A and Graduate Standing in MS Psychology program

Grading: Letter Graded

PSYC 270 - Seminar in Industrial and Organizational Psychology

3 unit(s)

Psychological theory, research and practice in organizations. Topics emphasized include motivation, job satisfaction, communication, leadership, group processes, decision-making, conflict, cooperation, power and organization development and change.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): MS I/O program priority. This course satisfies graduate-level GWAR in this master's program.

PSYC 271 - Seminar in Personnel Psychology

3 unit(s)

In-depth introduction to relevant methodology, research, applications and issues. Topics include legal issues in personnel, test validation, selection, job analysis, performance appraisal and training and development.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Note(s): MS I/O program priority.

PSYC 272 - Training and Development in Organizations

3 unit(s)

Course will address classic, current, and future issues in training and development. Topics covered include theories of learning, needs assessment, training methodology, program evaluation, management development, and trends that may influence future training and development programs.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

PSYC 273 - Seminar in Human Factors

3 unit(s)

Data and theory of sensory and cognitive psychology and their application to the design of systems used by humans.

Prerequisite(s): PSYC 135 and PSYC 158 (or equivalent).

Grading: Letter Graded

PSYC 275 - Professional Issues in I/O Psychology

3 unit(s)

Address topics and issues faced by I/O psychologists working within organizational settings. Review and analysis of research regarding the application of psychological theory, concepts, and research methodologies. Evaluation and discussion of early career-related ethical issues and professional challenges and strategies.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): PSYC 270 and graduate standing in MS I/O Psychology program

Grading: Letter Graded

PSYC 276 - Groups at Work

3 unit(s)

Group process and performance, types of work groups and tasks, group development (norms, roles and strategies), group leadership approaches and skills, decision-making, team building, high performing and self managing teams.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

PSYC 280 - General Seminar

3 unit(s)

Current psychological literature in selected fields and the development of a specific topic by the student.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Undergraduate major in psychology (or equivalent).

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

PSYC 291 - Method and Design for Applied Research

3 unit(s)

Development and management of applied research programs based on contributions of psychological research and methodology. Criticizing existing and proposed research. Reporting and communicating research results.

Prerequisite(s): PSYC 18 or PSYC 120A; STAT 95 and STAT 115.

Grading: Letter Graded

Note(s): MS program priority.

PSYC 293 - Organizational Development

3 unit(s)

Theory and practice of organization development, including systems thinking; action research; organization assessment and diagnosis; survey development and feedback; individual, group, inter-group and organization-wide interventions; consultant roles; and ethics of practice in organizations.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

PSYC 298 - Special Problems

1-6 unit(s)

Advanced work in areas not covered in any regular course offering. Course is repeatable for a maximum of four units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Mandatory Credit/No Credit/RP

PSYC 299 - Master's Thesis

1-6 unit(s)

Five units required for the M.A.; six units for the M.S.

Repeatable for credit.

Prerequisite(s): Advancement to candidacy for the MA or MS degree and thesis chair permission.

Grading: Credit/No Credit/RP.

PSYC 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project unless concurrently enrolled in another SJSU course

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Public Administration

PADM 202 - Regional Governance

3 unit(s)

An exploration of current theories, practices, issues and problems in the governance of urban regions in the United States.

Prerequisite(s): POLS 1, PADM 210.

Grading: Letter Graded

PADM 210 - Introduction to Public Administration

3 unit(s)

A broad overview of public administration, including policy analysis, budgeting, personnel, organization, leadership, decision-making and ethics in a political environment. Examination of the theory and application of public management practices at all levels of government.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

PADM 212 - Administrative Research Methods

3 unit(s)

The study and application of principles and methods of social science research and evaluation in a public administration context. Emphasis on learning research designs and using statistics and computers.

Prerequisite(s): Statistics.

Grading: Letter Graded

PADM 213 - Policy Analysis and Evaluation

3 unit(s)

An examination of the application of analytical and administrative tools to solving public problems. Study of the processes of policy formulation and the research and political tools necessary to assess program effectiveness.

Prerequisite(s): Statistics.

Grading: Letter Graded

PADM 214 - Introduction to Public Management

3 unit(s)

A study of current principles and practices of effectively managing public service organizations. Emphasis on critical thinking, project management, and implementation processes.

Prerequisite(s): Statistics.

Grading: Letter Graded

PADM 215 - Public Personnel Administration

3 unit(s)

An overview of personnel management in a political environment and its role in maintaining a democratic society. Methods and problems of job analysis, compensation, staffing, EEO, evaluation, training and union relations.

Prerequisite(s): PADM 210.

Grading: Letter Graded

PADM 217 - Organizational Theory

3 unit(s)

Analysis and application of theories about organizations, including organizational goals, structures, authority, leadership, decision patterns and communications. Emphasis on methods of change and differences between the public and private sectors.

Prerequisite(s): PADM 210.

Grading: Letter Graded

PADM 218 - Public Budgeting

3 unit(s)

A study of current theory, techniques and practice of public budgeting for political decision-making, planning and management. Focus on executive and legislative budget processes, reform efforts, public choice analysis, financial processes and the role of accounting.

Prerequisite(s): PADM 210; ECON 1B (or equivalent).

Grading: Letter Graded

PADM 219 - Public Financial Administration

3 unit(s)

An overview of public financial administration, including microeconomic concepts and techniques, tax theory and policy, user charges, inter-governmental transfers, debt administration and risk management in a political environment.

Prerequisite(s): PADM 218.

Grading: Letter Graded

PADM 220 - Non-Profit Management

3 unit(s)

Focuses primarily on internal nonprofit management issues in the U.S. context; course exposes students to core and emerging theories for a range of topics related to nonprofit management, including leadership, governance, accountability, performance management, resource development and financial management.

Prerequisite(s): PADM 210, PADM 218

Grading: Letter Graded

PADM 223 - Law and Public Administration

3 unit(s)

An overview of legal and political processes affecting relationships among the public, government institutions, administrative agencies and the courts. Focus on major cases related to administrative agency use of rules and orders to implement public policy.

Prerequisite(s): POLS 1 and PADM 210

Grading: Letter Graded

PADM 281 - Public Administration Internship

3 unit(s)

Supervised practical experience in public administration. Focus on integrating student work experiences with the academic program by means of seminars and consultation.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

PADM 284 - Directed Reading

1-3 unit(s)

Program of reading and writing created through student/faculty consultation in areas not covered by other courses. Repeatable for credit for a maximum of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Appropriate courses, instructor consent and department chair consent.

Grading: Letter Graded

PADM 295 - Topics in Public Administration

3 unit(s)

An exploration of current theories, problems and techniques in a selected major topic of current importance in public administration.

Grading: Letter Graded

PADM 297 - Advanced Seminar in Public Management

3 unit(s)

This course serves as the "capstone" of the MPA program. It uses an analysis of real world cases to relate principles and theories of public administration to concrete, real world problems. The individual subject papers dealing with the main class topic that earn a grade of A- or better will be published as an electronic journal. The culminating project for this class is the approved prospectus for the PADM 298 project.

Prerequisite(s): Permission of instructor is required.

Grading: Letter Graded

PADM 298 - Special Problems

3 unit(s)

Advanced individual research and projects.

Prerequisite(s): PADM 210, PADM 212, PADM 213, PADM 214, PADM 218; instructor consent; consent of the chair.

Grading: Mandatory Credit/No Credit/RP

PADM 299 - Master's Thesis

3 unit(s)

Independent research conducted under the supervision of a permanent faculty member and two other qualified persons. Emphasis on applying administrative concepts and analytical skills to actual problems of policy and administration in the public sector.

Course may be repeated for credit for up to 6 units.

Grading: Mandatory Credit/No Credit/RP

Note(s): Repeatable once for credit.

PADM 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Public Health

PH 1 - Understanding Your Health

3 unit(s)

Introductory course on the interdependence of the physiological, social and psychological factors influencing the healthy well-being of individuals throughout the life span. Emphasis is on identifying and utilizing both university and community resources to assist in personal and educational development.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

PH 15 - Human Life Span

3 unit(s)

Emphasizes growth and development of the individual from conception to death - perspective on biological, cultural, sociological and psychological changes and continuities during the human life span. Special attention will be given to socioeconomic status, gender and ethnic variations.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Cross-listed with RECL 15. Public Health and Recreation is responsible for scheduling.

Sustainability Related - SDG 3: Good Health and Well-Being

PH 67 - Introductory Health Statistics

3 unit(s)

A practical introduction to the statistical methods used in health, health care, biomedical, and public health settings. Concepts are illustrated with concrete examples that demonstrate how principles operate and are applied to common health problems.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Mathematics Enrollment Category M-I or M-II; for Categories III and IV, completion of a GE Area B4 course with a grade of C- or better.

Grading: Letter Graded

PH 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Repeatable for credit.

Grading: Mixed Grading

PH 99 - Introduction to Public Health

3 unit(s)

Introduces students to the history, ethical foundations, policies, tools, interventions, and essential public health services that shape population health. Will approach public health issues from biological, sociocultural, behavioral, environmental, and political perspectives.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

PH 100W - Writing Workshop

3 unit(s)

Development of skills in scientific and technical writing. How to write a critical review of published writing, a business letter, a scholarly paper, and give an oral presentation.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: Public Health, Recreation, Communicative Disorders and Sciences, Nutritional Science, and Interdisciplinary Majors.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

PH 102 - Health Team Building

3 unit(s)

Exploration of communication in small group settings and skill development necessary to work effectively, particularly in the health field. Topics include decision making, leadership, and conflict resolution integrating theory and practice.

Prerequisite(s): Upper Division Standing. Completion of PH 1, PH 15, and PH 67 with a minimum grade of C in each. Allowed Declared Majors: Public Health majors or minors only.

Grading: Letter Graded

PH 103 - Introduction to Health Policy

3 unit(s)

Examination of historical and current policies related to public health, stakeholders in health policy making and advocacy, and health policy frameworks for conducting policy analysis and policy making.

Prerequisite(s): Allowed Declared Majors: Public Health Majors and Minors.

Corequisite(s): Any 100W (NUFS 100W or PH 100W preferred).

Grading: Letter Graded

PH 104 - Community Health Promotion

4 unit(s)

Examination of community health issues, and assets, determinants, and levels of intervention. Introduction to approaches to disease prevention, health promotion, and social change to promote health. Application of community health promotion and disease prevention through service learning.

Prerequisite(s): PH 1, PH 15, PH 67, and PH 99. Allowed Declared Majors: Public Health Majors and Minors.

Corequisite(s): PH 102.

Grading: Letter Graded

Note(s): For Fall 2020, this is a 3 unit course with the prerequisites of PH 1, PH 15, and PH 67, and a corequisite of PH 114. Effective Spring 2021, this is a 4 unit course with prerequisites of PH 1, PH 15, PH 67, and PH 99.

Sustainability Focused - SDG 3: Good Health and Well-Being

PH 107 - Aging and Society

3 unit(s)

Social, psychological and physiological aging processes. Implications of aging for individuals and societies, with emphasis on issues related to diversity, equality and gender in the U.S.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all

SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with GERO 107 / SCWK 107. Social Work is responsible for scheduling.

Sustainability Focused - SDG 10: Reduced Inequalities

PH 108 - Health in Later Life

3 unit(s)

Normal age-related health changes and common illnesses in later life. Health status, behavior and attitudes of older adults. The continuum of health care services. Professional and ethical issues in service delivery.

Prerequisite(s): College biological sciences course.

Grading: Letter Graded

Cross-listed with GERO 108. Social Work is responsible for scheduling.

PH 114 - Applications in Community Health Promotion

3 unit(s)

Application of community health promotion and disease prevention through service learning. Collaborate with community-based partners to improve health and reduce disparities.

Prerequisite(s): Upper Division Standing, Major/Minors Only.

Corequisite(s): PH 104.

Grading: Credit/No Credit

PH 118 - Long Term Care Services

3 unit(s)

History and organization of the continuum of long term care for U.S. families, financing and regulatory policies, and factors influencing the quality of care. Professional and ethical issues facing long term care providers.

Prerequisite(s): PH 162.

Grading: Letter Graded

PH 126 - Drugs, Brain and Behavior

3 unit(s)

Survey of psychoactive drugs, including prescription and street drugs; social, behavioral and physiological effects of drugs; neural mechanisms of drug action; history of drug use.

Prerequisite(s): PSYC 30 or 3 units of biology.

Grading: Letter Graded

Cross-listed with PSYC 126. Psychology is responsible for scheduling.

PH 135 - Health Issues in a Multicultural Society

3 unit(s)

Multidisciplinary interpretation and evaluation of consumer health issues. Impact of cultural variables (including communication methods, socioeconomic status and traditional beliefs) on health and illness. Interaction of individuals in families and other groups.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with NUFS 135. Public Health and Recreation is responsible for scheduling.

Sustainability Focused - SDG 3: Good Health and Well-Being

PH 137 - Families, Aging, and Diversity

3 unit(s)

Family relationships of older adults in diverse U.S. ethnic groups. Current patterns of family and formal assistance to elders with disabilities. Critical analysis of eldercare policies and services.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Social Work is responsible for scheduling.

Sustainability Focused - SDG 10: Reduced Inequalities

PH 140 - Human Sexuality

3 unit(s)

Biological and sociocultural facets of human sexuality. Evolution and physiology of sex, reproductive biology/ethics and cross-cultural expression of sexual behavior.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Note(s): Not acceptable as an elective in the Biology major.

Cross-listed with ANTH 140 / BIOL 140. Anthropology is responsible for scheduling.

PH 145 - Community Mental Health

3 unit(s)

Comprehensive analysis of community mental health using a socio-ecological framework. Intersection of race, socioeconomic status, gender, sexual orientation, and mental health is examined. Emphasis is on prevention and recovery.

Prerequisite(s): Any 100W or instructor consent.

Grading: Letter Graded

Cross-listed with PSYC 145 / SOCI 145. Public Health and Recreation is responsible for scheduling.
Sustainability Related - SDG 3: Good Health and Well-Being

PH 158 - Health Communications

3 unit(s)

Introduction to, and application of, health communication concepts, theories, and principles to specific health topics. Students will gain a broad understanding of the role of communication and its complexity as it relates to disease prevention and health promotion.

Lecture 3 hours/lecture 3 hours.

Prerequisite(s): PH 1, PH 15, and PH 67 with a grade of C or better in each. Public Health Majors/Minors only.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

PH 161 - Epidemiology

3 unit(s)

The study of population-based risks of infectious and noninfectious diseases and how these risks relate to cause, treatment and prevention. Restricted to Majors and minors.

Lecture 3 hours/lecture 3 hours.

Prerequisite(s): Completion of PH 1, PH 15, and PH 67 with a grade of C or better. Upper division standing. Public Health Majors and Minors only or instructor consent.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

PH 162 - Health Care Organization and Admin

3 unit(s)

Exploration of health economics, financing, insurance theory and contemporary trends in health care organization, management and administration.

Corequisite(s): NUFS 100W / PH 100W or other 100W course. Restricted to Public Health Majors and Minors only or instructor consent.

Grading: Letter Graded

Sustainability Related

PH 164 - Health Social Marketing

3 unit(s)

Introduction to social marketing applications in community health education, including the examination of marketing principles to improve population health problems, and critical evaluation of the effectiveness of social marketing campaigns.

Prerequisite(s): PH 158 and Allowed Declared Majors: Public Health, Community Health Education Concentration only. Or instructor consent.

Grading: Letter Graded

PH 165A - Public Health Leadership Series I

1 unit(s)

Promotes students' adoption of professional behaviors, which will serve them in the classroom, in their interactions with faculty and colleagues outside the classroom, and in their careers upon graduation.

Prerequisite(s): Upper division standing, Public Health majors.

Grading: Letter Graded

PH 165B - Public Health Leadership Series II

1 unit(s)

Prepares students in the major for the internship experience by engaging course participants in self-reflection, continued skill development, and exploration of leadership styles and organizational structures. Students are expected to secure an internship location during this course. Second course in three course sequence.

Prerequisite(s): Upper Division Standing, Public Health majors only, and PH 165A .

Grading: Letter Graded.

PH 165C - Public Health Leadership Series III Fieldwork Experience

2 unit(s)

Practical application of public health theories and principles through an internship at a community health agency, public health data organization, healthcare facility, or other related industry.

Prerequisite(s): PH 165A, PH 165B, and upper division standing.

Grading: Credit/No Credit

PH 165D - Public Health Leadership Series IV

1 unit(s)

Guides graduating seniors in the transition from college to the workforce by engaging in exploring and articulating theoretical and practical leadership styles and personal and professional reflection to further develop personal leadership styles and potential. Fourth course in four course series.

Prerequisite(s): PH 165C, senior standing, and Public Health majors in final semester.

Grading: Letter Graded

PH 167 - Biostatistics

3 unit(s)

Statistical analysis of health and biological data covering measurement scales, random sampling, data quality, data storage descriptive and exploratory techniques, probability distributions, estimation and hypothesis testing, includes an integrated lab activity.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): PH 67 with a minimum grade of C. Public Health Majors only.
Grading: Letter Graded

Sustainability Related

PH 168 - Theoretical Foundations in Community Health Education

3 unit(s)

Explores the foundations of health education theory across the social ecological model, and the application of theories to understand and improve community health.

Prerequisite(s): PH 104 and Allowed Declared Majors: Public Health/Community Health Education concentration majors only. Or instructor consent.
Grading: Letter Graded

PH 169 - Diversity, Stress and Health

3 unit(s)

Impact of structured inequalities on stress and health of diverse populations. Analysis of physiological/psychosocial health factors related to diversity, as well as behavioral interventions and social actions that mediate stress and optimize health and social justice.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.
Grading: Letter Graded

Cross-listed with KIN 169. Kinesiology is responsible for scheduling.
Sustainability Focused - SDG 3: Good Health and Well-Being

PH 172 - Contemporary Environmental Health Issues

3 unit(s)

Examines the complex and interdependent relationship between environment and health outcomes. Advances scientific understanding of evolution and biodiversity, ecosystems, population dynamics, sustainability of earth's resources, pest management, solid and hazardous waste, water and air pollution, climate change, and environmental/occupational exposures.

Satisfies SJSU Studies R: Earth, Environment, and Sustainability.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.
Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

PH 176 - Introduction to Global Health

3 unit(s)

Examination of global distribution of disease and wellbeing. Explore connections between global health and social/economic development. Multidisciplinary approach to critical problems including HIV/AIDS, malaria, complex humanitarian emergencies, and disasters. Addresses ethics and leadership in global health.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

PH 179 - Public Health Capstone

3 unit(s)

Public Health capstone experience. Students analyze a community health problem and create a comprehensive evidence-based community health promotion plan informed by literature, theory, and best practices.

Prerequisite(s): PH 104, PH 161, and PH 100W each with a C or better in each. Senior standing. Allowed Declared Majors: Public Health.

Grading: Letter Graded

PH 180 - Individual Studies

1-4 unit(s)

Individual work on special topics by arrangement.

Repeatable for credit.

Prerequisite(s): Upper division standing, instructor consent and department chair approval. Not available to Open University Students.

Grading: Credit/No Credit

PH 183 - Special Topics in Community Health Education

3 unit(s)

Introduces students to an array of current and emerging topics in community health education. Contemporary topics that are relevant to analyzing and applying insights from health promotion to solve real-life community health problems.

Repeatable for credit when topic changes.

Prerequisite(s): Upper division standing, Public Health majors, PH 165A and PH 165B; or by instructor consent.

Grading: Letter Graded

PH 184 - Directed Reading

1-4 unit(s)

Directed reading in journals and books of authorities in the field of health.

Repeatable for credit.

Prerequisite(s): Upper division standing and department chair consent. Not available to Open University Students.

Grading: Credit/No Credit

PH 188 - Community Health Assessment

3 unit(s)

Introduction to principles and practices of public health assessment. Analyze primary and secondary data to develop and present a community health assessment.

Prerequisite(s): PH 100W, PH 104, and PH 161. Allowed Declared Majors: Public Health Concentration in Community Health Education majors. Or instructor consent.

Grading: Letter Graded

PH 189 - Community Health Education Capstone

3 unit(s)

Introduction to principles and practices in program planning and evaluation. Creation and presentation of an evidence-based community health promotion program plan using assessment from PH 188.

Prerequisite(s): PH 188 and PH 168. Allowed Declared Majors: Public Health Concentration in Community Health Education majors in their final semester.

Grading: Letter Graded

PH 191 - Applied Epidemiology

3 unit(s)

Explores the application of epidemiology. Students learn how to use standard epidemiological software for data analysis, conduct in-depth epidemiological investigations, understand screening in public health practice, and learn about models for infectious disease transmission.

Prerequisite(s): PH 161, PH 167, and upper division standing. Allowed Declared Majors: Public Health majors.

Grading: Letter Graded

PH 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Repeatable for credit.

Grading: Mixed Grading

PH 193 - Special Topics in Population Data Science

3 unit(s)

Current and emerging topics in population data science. Exploration of how data from well-conducted studies can inform policy and public health practice. Repeatable for credit when topic changes.

Course may be repeated 3 times for up to 9 units.

Prerequisite(s): Upper division standing, Public Health majors only, [PH 165A](#) and PH 165B or instructor consent.

Grading: Letter Graded.

PH 195 - Fundamentals of Data Management and Presentation

3 unit(s)

Introduction to widely used techniques for presenting and managing population health data. Provides experience managing data in a variety of formats including Excel, and creating informative graphics using data visualization and mapping software.

Prerequisite(s): PH 161 and PH 167. Allowed Declared Majors: Public Health Concentration in Population Data Science. Or instructor consent.

Grading: Letter Graded

PH 197 - Quantitative Analysis

3 unit(s)

Applied population health quantitative analysis course, which builds on concepts introduced in core courses, epidemiology and biostatistics. Students will conduct data analysis using the Statistical Analysis Software (SAS) package, with a specific focus on public health application.

Prerequisite(s): PH 161 and PH 167. Allowed Declared Majors: Public Health Concentration in Population Data Science. Or instructor consent.

Grading: Letter Graded

PH 198 - Qualitative Methods

3 unit(s)

Introduced students to qualitative research methods with a focus on theory, methodology, and data analysis. Additional topics include: research ethics, study design, rigor in research, critical lens and practical applications.

Prerequisite(s): Upper division standing. Allowed Declared Majors: Public Health Majors and Minors. Or instructor consent.

Grading: Letter Graded

PH 199 - Population Data Science Capstone

3 unit(s)

Students develop a proposal to test a research hypothesis related to a public health problem. Students identify knowledge/research gaps, create a study plan, develop a testable hypothesis, and present the research proposal.

Prerequisite(s): PH 161, PH 167, PH 191, and PH 197. Allowed Declared Majors: Public Health

Concentration in Population Data Science in their final semester. Or instructor consent.

Grading: Letter Graded

PH 200 - Contemporary Practice in Public Health

2 unit(s)

Introduction to the philosophy, ethics, historical roots, and approaches of contemporary public health education and health promotion. Emphasis is on frameworks and strategies used in practice.

Repeatable for credit.

Grading: Letter Graded

PH 201 - Groups and Training: Theory and Practice

2 unit(s)

Addresses the study of group theories, dynamics, and processes in professional context of public health. Students will experience and evaluate team processes such as stages of group development, facilitation, successful communication, conflict, power and influence, problem-solving, and decision-making.

Grading: Letter Graded

PH 205A - Quantitative Methods for Public Health Practice I

3 unit(s)

Integrated approach to the disciplines of Biostatistics and Epidemiology. Develops quantitative skills to evaluate data and make evidence-based decisions. Covers conduct and design of epidemiologic studies, basic biostatistical analyses, biostatistical software, and foundational knowledge of exposure and outcome assessment.

Grading: Letter Graded

PH 205B - Quantitative Methods in Public Health

3 unit(s)

Methods of public health and biostatistical data collection, management, analysis, and reporting using microcomputers, including the detection and control of confounding factors.

Prerequisite(s): PH 205A.

Grading: Letter Graded

PH 215 - Qualitative Methods for Public Health Practice

3 unit(s)

Introduction to qualitative methods, with focus on theory, data collection, and analysis. Students will collect qualitative data and analyze that data using software. Additional topics include research ethics, study design, and community-based participatory research.

Grading: Letter Graded

PH 225 - Evaluation Methods for Public Health Practice

3 unit(s)

Students will become familiar with the concepts of formative, summative, process, impact, and outcome evaluation, ethical considerations, and barriers such as time or resources. Students will develop a viable program evaluation plan for a campus or community partner.

Prerequisite(s): PH 205A, PH 205B, PH 215, and PH 272.

Grading: Letter Graded

PH 261 - Principles of Epidemiology

3 unit(s)

Introduction to epidemiologic concepts and methods with applications to public health practice for students intending to engage in, collaborate in, or interpret the results of epidemiologic studies in the scientific appraisal of community health.

Prerequisite(s): PH 167 or equivalent.

Grading: Letter Graded

PH 262 - Health Policy and Organization

3 unit(s)

Health policy and the organization of health services, with a focus on the United States. Health policy analysis, the policy-making process, health care economics, insurance theory, comparative health systems, and health care quality.

Grading: Letter Graded

PH 265 - Environmental Health

3 unit(s)

Investigation of environmental health issues: risk evaluation, risk management, hazardous materials, occupational health and safety, plus air, water and noise pollution. Learning fundamentals of managing environmental health problems.

Repeatable for credit.

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

PH 271 - Theoretical Foundations of Public Health

3 unit(s)

Role of theory in shaping practice, research and evaluation that facilitates social change and promotes health across the spectrum of prevention, including individual, community, organization, and policy levels.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

PH 272 - Health Promotion Planning and Evaluation

3 unit(s)

Theory and practice of developing community health programs. Focus on program planning within the context of strategic planning, problem/needs assessment, setting of program goals and objectives, approaches to program evaluation and grant writing.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): PH 271.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

PH 276 - Community Organization and Health Promotion

3 unit(s)

Advanced study of the principles, practices and ethical considerations underlying community organization, health promotion, empowerment and advocacy. Includes examination of the change process and introduction to the skills and tools of effective public health organizing.

Grading: Letter Graded

Sustainability Related - SDG 3: Good Health and Well-Being

PH 277 - Multicultural Communication for Health Professionals

3 unit(s)

Theories and skills of multicultural communication necessary for effective professional practice with diverse clients, communities, staff and colleagues. Examination of concepts and indicators of cultural competence begins with intensive self-study and concludes with community examples.

Grading: Letter Graded

PH 280 - Individual Graduate Studies

1- 3 unit(s)

Individual graduate work by arrangement with the instructor and in consultation with the MPH Coordinator/s. Approval by MPH Coordinator/s required to enroll in the course.

Course may be repeated for credit for up to 9 units.

Grading: Credit/No Credit/RP.

PH 291A - Fieldwork Seminar

1 unit(s)

Preparation for fieldwork placement, with emphasis on (1) self-assessment of strengths, competencies, professional objectives, and fieldwork priorities; (2) identification of fieldwork site and negotiation of Memorandum of Understanding; and (3) planning for professional development.

Repeatable for credit.

Prerequisite(s): PH 200, PH 201, PH 271, PH 272 or instructor consent.

Grading: Letter Graded

PH 291B - Fieldwork Practicum

1-2 unit(s)

Application of theory and skills to health education practice, research, and/or policy under the supervision of a preceptor.

Course is repeatable for up to 2 units.

Prerequisite(s): PH 200, PH 201, PH 271, PH 272, PH 291A or instructor consent. Not available to Open University Students.

Corequisite(s): PH 291P.

Grading: Credit/No Credit

PH 291C - Professional Skills for Public Health Practice

1 unit(s)

Introduction to the fundamental skills used in everyday Public Health practice. Emphasis on writing and presenting at a graduate level, critical thinking, collaboration and professional behavior. Additional topics include professional communication, giving and receiving feedback, professional relationships and interactions.

Grading: Credit/No Credit

PH 291D - Work Experience Practicum

2 unit(s)

Supervised work experience in community, health care organization, or worksite settings.

Prerequisite(s): PH 200, PH 201, PH 271, PH 272, PH 291A.

Grading: Mandatory Credit/No Credit/RP

PH 291P - Professional Development

1 unit(s)

Strategically selected professional development activities to supplement experiences during fieldwork and advance public health career objectives.

Prerequisite(s): PH 291A.

Grading: Credit/No Credit

PH 293 - Public Health Leadership

3 unit(s)

Preparation for leadership in public health. Emphasis is on: policy and politics of health advocacy, ethics in public health education, and final self-assessment of skills for practice and continuing education priorities.

Repeatable for credit.

Prerequisite(s): PH 291A and PH 291B or instructor consent.

Grading: Letter Graded

PH 298 - Graduate Project

3 unit(s)

Development and analysis of independent activity in the field of community health education, health administration or school health.

Repeatable for credit.

Prerequisite(s): Approved graduate project proposal and instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

Note(s): More than one semester may be required to complete activity.

PH 299 - Master's Thesis

3 unit(s)

Supervised original research in the field of community health education.

Course is repeatable for up to 6 units.

Prerequisite(s): Approved master's thesis proposal and instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

Note(s): One to two semesters and 3 to 6 units required.

PH 1290R - Culminating Experience Supervision

1-3 unit(s)

Continued work on dissertation, thesis, or project or in preparation for comprehensive exams beyond the minimum required units for cases in which final deliverables are still in progress and all other degree requirements except the culminating experience have been fulfilled.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class, or RFP in progress.

Grading: Credit/No Credit/No Degree Credit

Public Relations

PR 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad

Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Course may be repeated for credit for up to 6 units.

Grading: Mixed Grading

PR 99 - Introduction to Public Relations

3 unit(s)

Principles, evolution, and professional practice of modern public relations. Concepts of planning and executing effective communication strategies, including message design and distribution, for any organization.

Grading: Letter Graded

PR 190 - Media and Influencer Relations

3 unit(s)

How to promote an organization's brand by developing relationships with traditional and digital news organizations and social media influencers to earn credible third-party content that is ultimately discovered, shared, and drives a desired action.

Prerequisite(s): JOUR 61

Grading: Letter Graded.

PR 191 - Strategic Content Creation

3 unit(s)

Basics of creating and implementing a strategic content marketing plan, introducing students to tools and techniques for delivering valuable, relevant, and measurably effective content on behalf of organizations, guiding students through production of various marketing communication assets.

Prerequisite(s): JOUR 61

Grading: Letter Graded

PR 192 - Case Studies in Strategic Communication

3 unit(s)

Case studies focusing on the problems and challenges faced by a variety of organizations. Practical application of creative problem-solving, theory, and research about "real world" situations.

Prerequisite(s): PR 99.

Grading: Letter Graded

PR 192I - International Program Studies

1-9 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International

Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

PR 193 - Special Event Management

3 unit(s)

The planning and managing of events for the purpose of accomplishing organizational objectives. Emphasis on creative thinking, logistics and practical application of strategies and tactics. A major project is the execution of an actual event.

Prerequisite(s): PR 99 or instructor consent.

Grading: Letter Graded

PR 195 - Strategic Sport Communication and Media

3 unit(s)

Overview of the field of sport communication and media; specific topics include models of sport communication, print and electronic media, sport advertising, public relations, media relations, and employment opportunities. Students critically assess the communication efforts of a sports organization as well as construct their own communications in the field of sport.

Prerequisite(s): PR 99.

Grading: Letter Graded

PR 197 - Introduction to Corporate Internal Communication

3 unit(s)

Internal and employee communications from strategy to tactical delivery. Best practices in building internal communication strategies that support organization business goals, as well as raise employee morale, productivity and collaboration. Topics include building internal communication strategy, planning, platform design, tools and strategic messaging campaigns.

Prerequisite(s): PR 99.

Grading: Letter Graded

PR 199 - Campaign Planning and Management

3 unit(s)

Creative problem-solving in strategic planning and program management. Conceive, develop and present an integrated communications plan to a "real-world" client.

Prerequisite(s): PR 99, PR 190 or PR 191, PR 192, and MCOM 111.

Grading: Letter Graded

Radio - Television - Film

RTVF 10 - The Art of Film

3 unit(s)

Study of the formal, aesthetic, historical, and cultural contexts of film as an art form. GE Area C1.

Satisfies C1: Arts.

Grading: Letter Graded

RTVF 20 - Introduction to Audio for Film & Television

3 unit(s)

Fundamentals of audio production in film and television settings.

Misc/Lab: Lecture 2 hours/Activity 2 hours.

Prerequisite(s): Instructor Consent.

Grading: Letter Graded

RTVF 21 - KSJS On-Air Operations

3 unit(s)

On-Air operation of campus radio station KSJS-FM, FCC, equipment, D.J. interview, sports; all activities and processes required for live broadcasting, music, public service and community service programming.

Misc/Lab: Lecture 1 hour /Activity 4 hours.

Grading: Letter Graded

RTVF 22 - KSJS Radio Programming & Production

3 unit(s)

An introduction to radio programming and fundamental techniques of audio production for KSJS 90.5 FM. Lab experiences in programming, writing, production basics, post-production, including music, public affairs, promotions, interviews. Utilizes radio-audio hardware and software.

Lecture 2 hours/Activity 2 hours.

Grading: Letter Graded.

RTVF 23 - Podcasting For Radio and Digital Media

3 unit(s)

Lessons on storytelling, scriptwriting, sound gathering and interviews using smartphones, audio recording, editing, and developing a "radio voice". Created podcasts to be published, promoted and aired on our campus radio station KSJS 90.5 FM.

Grading: Letter Graded.

RTVF 30 - Introduction to Film & Television Production

3 unit(s)

Fundamentals of film and television production.

Misc/Lab: Lecture 2 hours/Activity 2 hours.

Prerequisite(s): Instructor Consent

Grading: Letter Graded

RTVF 31 - Film and Television Aesthetics

3 unit(s)

Theory of applied aesthetics in video, film, and new media based on an examination of fundamental image and sound production.

Prerequisite(s): Instructor Consent

Grading: Letter Graded

RTVF 80 - Introduction to Media

3 unit(s)

Analysis of the history and evolution of radio (audio) and television (video) in the U.S. Examination of programming, government regulation, advertising, networking, development of electronic media technologies and world media systems.

Grading: Letter Graded

RTVF 82 - Introduction to Film History

3 unit(s)

The history and evolution of the motion picture from 1895 to 1945. Viewing of representative films, study and discussion of major world film movements, important directors, and key genres.

Grading: Letter Graded

RTVF 83 - Digital Media Impact and Analysis

1 unit(s)

Media institutions are examined regarding technology they use/develop, information they distribute, entertainment they provide and influence they bring. Engages exploration into the ways digital media have had an impact on various aspects of contemporary culture such as concepts of community, communication, identity, privacy, property, value systems, economic structures, political institutions, and natural environments. Course content shall develop students' analytical skills and understanding of social science in ways that develop the capacity for informed civic engagement. Understanding how media effects work, how they impact culture, or define reality, requires learning the tools of analysis to study them.

Grading: Letter Graded.

RTVF 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to

study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

RTVF 110 - Media and Culture

3 unit(s)

Critical survey of roles played by electronic media in shaping culture. Media institutions are examined regarding information they distribute, entertainment they provide and influence they bring. Analysis of media sources, messages and audiences.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 4: Quality Education

RTVF 111 - Global Screen Cultures

3 unit(s)

Uses films from previously marginalized national cinemas from around the world as primary sources to teach students to appreciate, understand and compare diverse cultures. Introduces students to alternative modes of filmmaking and analysis.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Course may be repeated for up to 6 units.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU Studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded.

RTVF 120 - Intermediate Audio for Film & Television

3 unit(s)

Techniques of audio production and post production for film and television settings.

Lecture 2 hours /Activity 2 hours.

Prerequisite(s): RTVF 20, RTVF 30, RTVF 31, upper division standing or instructor consent. No concurrent enrollment with prerequisites.

Grading: Letter Graded

RTVF 121 - KSJS-FM Radio Activity

1-3 unit(s)

Student participation in radio with KSJS-FM. Activities supervised by area faculty. Open to all students whether lower division or upper-division standing. Repeatable, but only 6 units may be used for graduation.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

RTVF 122 - KSJS Station Operation & Mgmt

3 unit(s)

Structure and operation of non-commercial radio station KSJS-FM. Theory and practice of radio management, programming, production, public service, sales and engineering. Repeatable, but only 6 units may be used for graduation.

Misc/lab: Lecture 1 hour/Activity 4 hours

Prerequisite(s): Appointment to KSJS management staff or instructor consent.

Grading: Letter Graded

RTVF 126 - Advanced Audio Mixing

3 unit(s)

Postproduction sound, editing, sweetening, and mixing for the film and television industry. Through exploration and hands-on exercises - software and hardware are utilized for audio mixing and sweetening. Covers both the technology and the art of audio mixing to improve the final film and/or media product aesthetically and technically.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): RTVF 20 and RTVF 120

Grading: Letter Graded

RTVF 130 - Intermediate Film & Television Production

3 unit(s)

Techniques of film and television production.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): RTVF 20, RTVF 30, and RTVF 31, upper division standing or instructor consent. No concurrent enrollment with prerequisites.

Grading: Letter Graded

RTVF 131A - Post Production: Color Correction

3 unit(s)

Post production course with emphasis on color grading and correction of film and television production projects.

Misc/Lab: Lecture 2 hours/Activity 2 hours

Prerequisite(s): RTVF 130 or instructor consent.

Grading: Letter Graded

RTVF 131B - Post Production Editing & Delivery

3 unit(s)

Editing, post production and delivery techniques for film and television projects.

Misc/Lab: Lecture 2 hours/Activity 2 hours.

Prerequisite(s): RTVF 130 or instructor consent.

Grading: Letter Graded

RTVF 132A - Introduction to Cinematography

3 unit(s)

First in-depth course in cinematography. Principles of motion picture photography explored through lecture, discussions, projects and screenings. Skills of the cinematographer developed by shooting exercises during and outside of class. Appreciation of the art of and technology of cinematography.

Misc/Lab: Lecture 2 hours/Activity 2 hours

Prerequisite(s): RTVF 30 or Instructor consent.

Grading: Letter Graded

RTVF 132B - Advanced Cinematography

3 unit(s)

Advanced, in-depth course in cinematography consisting of mostly hands-on practicum, with lectures as needed. Dramatic scenes are filmed in realistic production shooting situations, both in the studio and on location. Scripts to be photographed are selected by the professor and the students based on the challenges they present.

Misc/Lab: Lecture 2 hours/Activity 2 hours

Prerequisite(s): RTVF 131A or Instructor consent. No concurrent enrollment with prerequisites.

Grading: Letter Graded

RTVF 133 - Film and Television Production Management

3 unit(s)

Analysis of film and television organization and programming concepts, including production management, decision-making processes, technical script breakdown, and its relation to budgeting and finance.

Grading: Letter Graded

RTVF 135 - RTVF Production: Special Projects

3 unit(s)

Principles, procedures and techniques used to produce an advanced-level radio, audio, television or film

project. See department office for specific project information.

Misc/Lab: Lecture 2 hours/Activity 2 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): RTVF 20, RTVF 30, upper division standing or instructor consent.

Grading: Letter Graded

RTVF 136 - Advanced Film & Television Production

3 unit(s)

Creation, production and direction of senior-level project utilizing cinematic language, advanced technical skills, directing talent, and narrative storytelling.

Misc/Lab: Lecture 2 hours/Activity 2 hours.

Prerequisite(s): RTVF 120, RTVF 130; Upper division standing or instructor consent.

Grading: Letter Graded

RTVF 160 - Introduction to Screenwriting

3 unit(s)

Basic principles and practices in writing scripts for film and/or television.

Course may be repeated for credit.

Prerequisite(s): RTVF 020, RTVF 030 and TA 100W, upper division standing or instructor consent.

Grading: Letter Graded

RTVF 161 - Advanced Screenwriting

3 unit(s)

Each student develops an original screenplay through several drafts in this workshop. Drawing on constructive feedback from classmates and instructor. The course focuses on dramatic structure, character and plot development as well as visual language of the screen.

Prerequisite(s): RTVF 160.

Grading: Letter Graded

RTVF 163 - Creating and Writing the Television Series

3 unit(s)

Builds on a student's previous narrative writing experience to provide an intensive study of creating and writing an original television series. Modeling a television writer's room, students study the narrative and dramatic requirements of developing a storyline and characters in the episodic form.

Lecture 2 hours/activity 2 hours.

Course may be repeated for up to 6 units.

Prerequisite(s): RTVF 160 or consent of instructor.

Grading: Letter Graded

RTVF 180S - Individual Studies

1-3 unit(s)

Directed study (special production or research projects) in specified fields not covered by offered courses.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor Consent

Grading: Letter Graded

RTVF 181 - Modern Film History

3 unit(s)

The history and evolution of the motion picture after 1945. Viewing of representative films, study and discussion of major world film movements, important directors, and key genres.

Prerequisite(s): RTVF 82, upper division standing or instructor consent.

Grading: Letter Graded

RTVF 183 - Critical Studies & Research in RTVF

3 unit(s)

Critical and scholarly inquiry into established and emerging areas of criticism, theory and research in RTVF studies. Production of scholarly criticism and research.

Prerequisite(s): RTVF 10, RTVF 80, Upper Division standing or instructor consent.

Grading: Letter Graded

RTVF 185 - Special Topics in RTVF

3 unit(s)

Special topics in radio, television and film. Contact department office for specific topic information.

Repeatable for up to 6 units when topic changes.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing. Open to all students lower division students with instructor consent.

Grading: Letter Graded

RTVF 192I - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad

and Away programs.

Grading: Mixed Grading

RTVF 198 - RTVF Internships, Portfolio, Career Prep

3 unit(s)

Supervised internships with approved radio, television, film or media organizations. Written evaluation submitted by sponsor and student after field work. Repeatable for credit up to 6 units.

Misc/Lab: Lecture 3 hours/Activity 9 hours.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

RTVF 199H - Honors Program

2-3 unit(s)

Demanding project demonstrating student's ability to do independent action and research. Written thesis or, in the case of the creative project, analysis and evaluation of the aesthetic problem; thesis to be defended orally by the student before a theatre arts staff committee. May be repeated once for credit.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Senior standing/3.0 GPA; by invitation only.

Grading: Credit/No Credit

Cross-listed with TA 199H. Film and Theatre is responsible for scheduling.

Recreation

RECL 10 - Creating a Meaningful Life

3 unit(s)

Study how a meaningful life relates to the freedom to pursue happiness. Examines personal, social, and cultural bases for a creative and successful lifestyle. Learn to recognize and foster creative potential for lifelong personal growth, meaningful rewards, and leisure enjoyment.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

RECL 15 - Human Life Span

3 unit(s)

Emphasizes growth and development of the individual from conception to death - perspective on biological, cultural, sociological and psychological changes and continuities during the human life span. Special attention will be given to socioeconomic status, gender and ethnic variations.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Cross-listed with PH 15. Public Health and Recreation is responsible for scheduling.
Sustainability Related - SDG 3: Good Health and Well-Being

RECL 90 - Foundations of Recreation Parks & Tourism

3 unit(s)

Field of parks and recreation; history of development of the recreation profession; survey of recreation and leisure services.

Grading: Letter Graded

RECL 94 - The Outdoor Recreation Experience

3 unit(s)

Students will explore, understand, and experience firsthand the value, meaning, and benefits of a variety of outdoor recreation activities. Socio-cultural and ecological systems will be examined as they relate to the delivery of outdoor recreation experiences in both the public and private sector.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

RECL 97 - Event Planning

3 unit(s)

Principles of event planning with emphasis on development and integration of operational strategies in recreation and hospitality management. Application of programming techniques and exploration of career opportunities in event management.

Misc/Lab: Lecture 2 hours/activity 3 hours.

Grading: Letter Graded

RECL 100W - Writing Workshop

3 unit(s)

Developing and enhancing written communication skills in the recreation and leisure profession in the following areas: scientific/technical writing, administrative writing, public-relations-related writing and funding proposals.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Allowed Declared Majors: Recreation and Hospitality Management. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

RECL 110 - Leisure, Life and Contemporary Society

3 unit(s)

Explore conceptual foundations of play, recreation and leisure and their importance in physical, social, psychological and spiritual development across the lifespan. Assess the roles of existing services in enhancing quality of life across social, cultural, economic and environmental realms.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

RECL 111 - Leisure, Culture, and Identity

3 unit(s)

Perspectives of leisure as a source of self-expression and social control related to cultural beliefs, values, and practices and institutionalized social systems. Observation, analysis and critique of history and social structures, leisure and culture, and personal opportunities for change.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

RECL 112 - Foundations of Recreation Therapy

3 unit(s)

Fundamentals of the profession; history, delivery models, theory and practice of Recreation Therapy as a treatment modality for persons whose functional abilities are impaired. Exposure to ADA facility assessment, inclusion, and impact of social attitudes through didactic and experiential learning.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

RECL 132 - Recreation Program Planning

3 unit(s)

Learn to plan and implement programs and events for diverse individual, group and community recreation experiences using contemporary needs assessment, outcomes oriented goal setting, program/event selection, leadership techniques and evaluation tools.

Grading: Letter Graded

RECL 135 - Planning and Managing Rec Areas & Facil

3 unit(s)

Content includes legal principles and risk management, as well as fundamentals of facility design and preventive maintenance in recreation, park, and tourism settings. This is a problem-based learning course, including case study, problem solving, project applications, and working with stakeholders.

Grading: Letter Graded

Sustainability Related - SDG 8: Decent Work and Economic Growth

RECL 136 - Principles of Recreation and Park Admin

3 unit(s)

In the context of leadership roles and responsibilities in the field of recreation and park administration, course examines issues related to the organization and administration of human resources, finances, areas and facilities, programs, risk management, and liability.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

Sustainability Related - SDG 8: Decent Work and Economic Growth

RECL 140A - Spec Interventions in RT:Aquatic Therapy

1 unit(s)

Develop in-depth knowledge and skills related to the facilitation and supervision of a complex Recreation Therapy intervention. Includes equipment use, clinical application of each aspect of the activity or equipment, contraindications, safety, facilitation techniques, costs, industry standards, and evidence-based practices.

Course may be repeated for credit for up to 3 units.

Grading: Letter Graded

RECL 140B - Spec Inter in RT: Behavior Interventions

1 unit(s)

Theory and practice of interventions that positively affect healthy behaviors. Implementing prevention strategies including activity modification, assessment of harmful or disruptive behaviors, and identifying cause and effect relationships. Learn and practice teaching appropriate behaviors, increasing appropriate behaviors, decreasing inappropriate behaviors.

Course may be repeated for credit for up to 2 units.

Grading: Letter Graded

RECL 140C - Spec Inter in RT: Adventure Tx

1 unit(s)

Theoretical, hard, and soft skills related to adventure therapy interventions. Demonstrate skill development

through facilitation. Learn diverse interventions and clinical application, modification, contraindications, and safety precautions for each based on psychiatric diagnosis served.

Course may be repeated for credit for up to 2 units.

Grading: Letter Graded

RECL 143 - Festivals and Community Special Events

3 unit(s)

Principles and applications for effective management of festivals, fairs and community special events; including planning, marketing, financing, evaluating, logistics, consumer behavior, corporate sponsorship, licensing agreements, risk management, and sustainable practices.

Grading: Letter Graded

Sustainability Related - SDG 8: Decent Work and Economic Growth

RECL 144 - Natural and Cultural Resource Interpretation in Recreation and Parks

3 unit(s)

Explore the interpretive approach to communicating value and vision of nature, outdoor recreation and tourism sites. Gain skills to develop and conduct activities such as guided walks, interpretive programs and fireside chats. Learn fundamentals of creating interpretive media such as brochures, displays, and exhibits as well as e-media.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

RECL 148 - Biofeedback Principles and Practices

3 unit(s)

Conceptual and historical review of Biofeedback theory and practice. Experiential engagement with software, instrumentation, data interpretation and personal reflection. Assessment, treatment, evaluation, and case studies applied to medical and non-medical practices.

Lecture 2 hours/activity 2 hours.

Grading: Letter Graded

RECL 150 - For-Profit Enterprises in Recreation

3 unit(s)

Development of knowledge and skills relating to the variety and types of for-profit recreation enterprises, including planning for and management of commercial ventures, development of corporate identity and market niche, and forecasting of trends and shifts in consumer culture.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

RECL 152 - Non-Profit Leadership & Management

3 unit(s)

Introduction to the historical and philosophical foundations of the Non-Profit sector. Provides a basic understanding of key issues in managing contemporary nonprofit organizations including: organizational behavior; board development; fund-raising; boundary-spanning skills; and developing leadership skills for social innovation and entrepreneurship.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

RECL 153 - Youth Development and Services

3 unit(s)

Surveys the field of youth development, its historical roots, sociocultural and psychological development, and contemporary innovations. Develop knowledge of the institutional and programmatic factors that lead to positive developmental outcomes for youth in leisure and human service organizations.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

RECL 155 - Outdoor Recreation Systems

3 unit(s)

Overview of outdoor recreation in the United States. Study of the historic, social, economic and political factors influencing natural resource protection. Includes a survey of organizations that manage visitors and protected areas to provide quality outdoor recreation experiences.

Prerequisite(s): Upper Division Standing.

Grading: Letter Graded

Sustainability Related - SDG 15: Life on Land

RECL 157 - Sustainable Recreation & Ecotourism

3 unit(s)

Course examines cultural, ethical, environmental and social science issues, and uses applied research methods to achieve competence in making programmatic and resource management decisions for recreational and tourism purposes.

Prerequisite(s): Upper division standing

Grading: Letter Graded

Sustainability Focused - SDG 8: Decent Work and Economic Growth

RECL 157ITL - Sustainable Recreation & Ecotourism: International Experience

3 unit(s)

Course examines cultural, ethical, environmental and social science issues, and uses applied research

methods to achieve competence in making programmatic and resource management decisions for recreational and tourism purposes.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

RECL 160 - Evaluation and Research in Recreation

3 unit(s)

Students will learn about the systematic process for evaluation or research. The course focuses on three main areas: Criteria and research questions, evidence and data (data collection and data analysis), and judgment and interpretation. The course is for students interested in basic information about systematic inquiry using evaluation and research design, data collection and analysis, and data reporting.

Prerequisite(s): RECL 90, RECL 100W, RECL 110

Corequisite(s): RECL 136.

Grading: Letter Graded

RECL 169 - Practicum in Recreation Therapy

1 unit(s)

Supervised 100 hour competency-based field learning in approved health agency (e.g., hospital, community health, municipal). Learning exposes the learner to different populations, interventions, terminology, resources. Learner will observe job task skills, apply knowledge, and gain abilities of Recreation Therapy practice.

Prerequisite(s): RECL 90

Grading: Credit/No Credit

RECL 170A - Pre-Intern Workshop

1 unit(s)

Introduces and prepares upper division majors for senior internship. Includes career goal clarification, resume development and interviewing through both workshops and online delivery.

Prerequisite(s): RECL 90, RECL 100W, RECL 110.

Corequisite(s): RECL 136, RECL 137.

Grading: Credit/No Credit

RECL 170B - Internship in Recreation

10 unit(s)

Supervised 40-hour per week internship (minimum of 12 weeks) in one of a variety of approved agencies (leisure services, park and recreation, or tourism/commercial recreation).

Prerequisite(s): Upper division standing; RECL 136, RECL 160, RECL 170A.

Grading: Credit/No Credit

RECL 170C - Internship in Recreation Therapy

10 unit(s)

Supervised 40-hour per week internship (minimum 15 weeks, 600 hours) occurring in approved health agencies. Supervisor must have a valid CTRS credential. Student develop competencies as identified in the NCTRC Job Task Analysis and ATRA Standards of Practice.

Prerequisite(s): RECL 112, RECL 170A, RECL 187, RECL 193, RECL 197, RECL 198, and RECL 199.

Grading: Credit/No Credit

RECL 180 - Individual Studies

1-4 unit(s)

Individual work investigating special topics/problems through research, applied projects, and/or field experiences. Assessment by project(s) and/or paper(s).

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Upper division standing, supervising instructor approval, and department chair consent.

Grading: Credit/No Credit

RECL 184 - Directed Reading

1-4 unit(s)

Directed reading in journals and books by authorities in Hospitality, Recreation, Tourism and related fields. Assessment by project(s) and/or paper(s).

Prerequisite(s): Upper division standing, supervising instructor approval, and department chair consent.

Grading: Credit/No Credit

RECL 185 - Leisure, Recreation and Aging

3 unit(s)

Theory and practice related to the role of leisure services in maximizing the quality of life for older adults. Interrelationship of leisure and other supportive services for older adults in community and institutional settings.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with GERO 185. Public Health and Recreation is responsible for scheduling.

RECL 187 - Leisure Education in Recreation Therapy

3 unit(s)

Overview of leisure education as it is used both in medical and non-medical settings to improve functioning and wellbeing among diverse clientele. Students will learn historical, philosophical, and contemporary conceptual foundations, evidence-based and practical applications to service delivery.

Grading: Letter Graded

RECL 192 - International Program Studies

1-10 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

RECL 193 - RT Interventions for People with Physical Conditions

3 unit(s)

Theoretical foundations, research, and evidenced based Recreation Therapy interventions for persons with physical, intellectual, and developmental disabilities and other chronic conditions. Focuses on rehabilitation, community reintegration, day programs, and inclusion.

Prerequisite(s): Upper division standing

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

RECL 197 - Recreation Therapy in Mental Health

3 unit(s)

Application of theory, models, concepts and facilitation processes used in Recreation Therapy and related professions for people with mental health conditions. Experiential learning and facilitation of leisure education, clinical interventions, and behavioral change processes used in medical and non-medical settings.

Lecture 2 hours/activity 2 hours.

Prerequisite(s): Upper division standing and RECL 112.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

RECL 198 - Rec Therapy Assessment and Documentation

3 unit(s)

Clinical procedures utilized in Recreation Therapy whereby habilitation/rehabilitation is the primary goal; client assessment, development of behavioral objectives and treatment plans, evaluation, documentation, medical terminology, and charting procedures are covered. Extensive skill development regarding critique and development of assessment tools.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

RECL 199 - Advanced Practices in Recreation Therapy

3 unit(s)

The application and examination of concepts, techniques, research, and legal issues utilized by advanced practitioners and managers. Includes trends and issues related to clinical supervision, reimbursement, quality improvement, legislation, comprehensive program design, and applied research that produces evidenced based practice.

Prerequisite(s): RECL 112.

Grading: Letter Graded

Religious Studies

RELS 1A - Elementary Hebrew

4 unit(s)

Basic skills and structure of the Hebrew language, in the context of the history and range of cultural expressions in the Hebrew speaking world.

Satisfies C2: Humanities.

Grading: Letter Graded.

Cross-listed with HEBR 1A / JWSS 1A. World Languages and Literatures is responsible for scheduling.

RELS 1B - Elementary Hebrew

4 unit(s)

Second level of Elementary Hebrew, further developing students' proficiency in reading, writing, speaking, and listening in Modern Hebrew, delving deeper into the context of the history and range of cultural expressions in the Hebrew speaking world.

Satisfies C2: Humanities.

Prerequisite(s): HEBR 1A (or equivalent).

Grading: Letter Graded.

Cross-listed with HEBR 1B / JWSS 1B. World Languages and Literatures is responsible for scheduling.

RELS 15A - Intermediate Hebrew

3 unit(s)

Developing speaking skills.

Prerequisite(s): HEBR 1A and HEBR 1B (or equivalent).

Grading: Letter Graded.

Cross-listed with HEBR 15A / JWSS 15A. World Languages and Literatures is responsible for scheduling.

RELS 15B - Intermediate Hebrew

3 unit(s)

Developing speaking skills.

Prerequisite(s): HEBR 1A and HEBR 1B (or equivalent).
Grading: Letter Graded.

Cross-listed with HEBR 15B / JWSS 15B. World Languages and Literatures is responsible for scheduling.

RELS 70 - Gods, Guns, Gurus, Grails-World Religion

3 unit(s)

Survey of major world religions, east and west, past and present. Structure and patterns of faith manifest in sacred texts, institutions, rituals, central figures and movements.

Satisfies C2: Humanities.

Grading: Letter Graded

RELS 90 - Bible History and Literature

3 unit(s)

The Bible in context of its history, literary sources and as a reflection of Jewish and Christian traditions. Motifs and themes in light of their original audience, historic usage and contemporary development.

Satisfies C2: Humanities.

Grading: Letter Graded

Cross-listed with HUM 90 / JWSS 90 / MDES 90. Humanities is responsible for scheduling.

RELS 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

RELS 99 - Death, Dying and Religions

3 unit(s)

Is death the end or the beginning? Learn how people integrate the physical, emotional, psychological, and spiritual dimensions of living and dying. Examine religious teachings and practices for making death personally meaningful, socially significant, or even politically powerful.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Cross-listed with GERO 99 / HUM 99. Humanities is responsible for scheduling.

RELS 100W - Writing in the Humanities & Interdisciplinary Arts

3 unit(s)

Advanced workshop in composition and reading for the critical and comparative study of the humanities and interdisciplinary arts. Students explore and practice the thinking and writing skills that help us communicate insight, critique, interpretation, description, and analysis of arts, literature, history, and culture, including expository writing and library research. Readings and objects of study include a range of topics and at least two different art forms.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second-semester composition course (with a grade of C- or better); completion of core GE; and upper-division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

Cross-listed with AMS 100W / HUM 100W. Humanities is responsible for scheduling.

RELS 102A - Advanced Hebrew

3 unit(s)

Readings, grammar, discussion and composition.

Prerequisite(s): Four semesters of college Hebrew (or equivalent).

Grading: Letter Graded

Cross-listed with HEBR 102A / JWSS 102A. World Languages and Literatures is responsible for scheduling.

RELS 102B - Advanced Hebrew

3 unit(s)

Readings, grammar, discussion and composition.

Prerequisite(s): 12 units of college Hebrew (or equivalent).

Grading: Letter Graded

Cross-listed with HEBR 102B / JWSS 102B. World Languages and Literatures is responsible for scheduling.

RELS 104 - Asian Philosophy

3 unit(s)

Philosophical examination of Confucianism, Daoism, Buddhism and some other significant movements of thought originated in Asia. Comparison with Western philosophy.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ASIA 104 / PHIL 104. Philosophy is responsible for scheduling.

RELS 109 - Philosophy of Religion

3 unit(s)

Philosophical issues regarding the existence of a supreme being, evil, mysticism, miracles, reincarnation, faith, the possibility of enlightenment, and the connection between religion and morality.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with PHIL 109. Philosophy is responsible for scheduling.

RELS 111 - Special Topics in Jewish Studies

3 unit(s)

Special Topics in Jewish Studies. Topics vary and will be announced each semester. Repeatable for credit under different subtitles. Repeatable for credit when topic changes.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with HIST 111 / HUM 111 / JWSS 111. History is responsible for scheduling.

RELS 114 - Legacy of Asia

3 unit(s)

Interdisciplinary focus on continuity and change in China and India as these ancient civilizations responded to challenges throughout their history.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ANTH 114 / ASIA 114 / HUM 114. Humanities is responsible for scheduling.

RELS 120 - Censors and Icons: Arts and Religion

3 unit(s)

Study of interactions between arts and world religions, using paradigmatic examples (e.g. Eastern Orthodox icons, Muslim architecture, Zen Buddhist calligraphy, Hindu Vedic chant, Biblical poetry) and contemporary developments (e.g. Evangelical Christian films, New Age music, religious themes in literature).

Grading: Letter Graded

RELS 122 - Magic, Science and Religion

3 unit(s)

Exploring the ways in which people have attempted to gain mastery over the natural and supernatural worlds beginning with prehistoric times and concluding with modern day society and the contemporary world.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ANTH 122. Humanities is responsible for scheduling.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

RELS 131 - Gender, Sexuality, and Religion

3 unit(s)

Women's roles and gendered categories within diverse religions. Feminist critiques, reforms, and creations of religious institutions. The political and feminist dimensions of women's religious experience. Understanding the roles of sexuality in religion.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with WGSS 131. Humanities is responsible for scheduling.

Sustainability Related - SDG 5: Gender Equality

RELS 134 - Religion Film & Media

3 unit(s)

Depictions of religion, religions, religious behavior, and religious propaganda in film and media. Exploring these from several perspectives, (e.g. emic and etic, cross-national, aesthetic) and examining the murky problem of "the truth" in the depiction of religious and spiritual experience.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with CA 134 / HUM 134. Humanities is responsible for scheduling.

RELS 137 - Introduction to Black Religion

3 unit(s)

Analysis of formation and development of African American religious ideas and institutions (i.e., Christianity, Islam, Judaism) in the Black community and their effect on the African American personality.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with AFAM 137. African American Studies is responsible for scheduling.

RELS 142 - Contemporary Buddhism and its Roots

3 unit(s)

Teachings of Gautama, the Buddha and ways in which those teachings were modified in forms of Buddhism that followed: Theravada in southeast Asia and Mahayana in East Asia.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 142 / HUM 142. Humanities is responsible for scheduling.

RELS 144 - Chinese Traditions

3 unit(s)

Religious thought and practice of China's three Great Traditions (Buddhism, Taoism and Confucianism) as well as China's Little Tradition (Chinese folk religion). The role of these traditions within traditional Chinese culture and their relevance to the modern world, including China.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ASIA 144 / HUM 144. Humanities is responsible for scheduling.

RELS 145 - Middle Eastern Traditions

3 unit(s)

Introduction to the peoples and cultures of the Middle East through exploration of the cooperation, competition, conflict and dialogues between the ethnic, national, and religious communities of contemporary Middle Eastern countries.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ANTH 145 / MDES 145. Humanities is responsible for scheduling.

RELS 148 - Religion and Anthropology

3 unit(s)

Comparative anthropological study of religious systems and world views; Anthropological theories concerning origin and evolution of religion; structure and function of ritual and myth; types of religious specialists.

Prerequisite(s): ANTH 11, ANTH 25 or instructor consent.

Grading: Letter Graded

Cross-listed with ANTH 148. Anthropology is responsible for scheduling.

RELS 156 - Islam, Politics and the West

3 unit(s)

An in-depth look at the roots of Islamic tradition, law, politics, culture, and society. Emphasis on Islam's growing global prominence; relations with the West; stereotypes and misconception, as well as the nature of the Islamic state.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded.

Cross-listed with MDES 156. Humanities is responsible for scheduling.

RELS 162 - Religion and Political Controversy in the US

3 unit(s)

Contemporary problems (e.g., ecology, abortion, war, gender, sexuality and race) as interpreted by a diverse range of American ethno-religious groups.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

RELS 180 - Individual Studies

1-4 unit(s)

A project.

Prerequisite(s): Religious studies upper-division major or minor and coordinator consent.

Grading: Credit/No Credit

Cross-listed with MDES 180. Humanities is responsible for scheduling.

RELS 184 - Directed Reading

1-4 unit(s)

Prerequisite(s): Religious studies upper-division major or minor and coordinator consent.

Grading: Credit/No Credit

Cross-listed with MDES 184. Humanities is responsible for scheduling.

RELS 190 - Senior Seminar in Humanities

3 unit(s)

Readings, discussions and individual research projects relating to an interdisciplinary theme selected by the instructor.

Pre/Corequisite(s): Upper-division Standing. Any 100W class.

Grading: Letter Graded.

Cross-listed with AMS 190 / HUM 190. Humanities is responsible for scheduling.

RELS 191 - Religion in America

3 unit(s)

History of social and intellectual influence of religious groups, stressing their African-, Asian-, European-, Latin- and Native-American roots. Highlights contact between groups, immigration, religious diversity and syncretism.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with HUM 191. Humanities is responsible for scheduling.

RELS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Russian

RUSS 1A - Elementary Russian I

4 unit(s)

Elementary Level course that teaches the basics of Russian script and cursive, pronunciation patterns, grammar and sentence structure. Students are able to conduct everyday conversations, read simple texts and write short paragraphs on topics studied.

Satisfies C2: Humanities.

Grading: Letter Graded

RUSS 1B - Elementary Russian II

4 unit(s)

Second semester Elementary Level course. Basics of Russian pronunciation patterns, grammar and sentence structure in the context of culture. Students will be able to conduct everyday conversations, read simple texts and write short paragraphs on topics studied.

Satisfies C2: Humanities.

Prerequisite(s): RUSS 1A (or equivalent).

Grading: Letter Graded

Science

SCI 2 - Success in Science

3 unit(s)

Emphasis on development of study skills, time management, and personal growth needed to transition from high school to university. Orientation to SJSU policies and procedures; and degree and career options in science. Guest lecturers, peer advisors, and community building.

Lecture 2 hours/Activity 2 hours.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded.

SCI 75 - Fundamentals of Leadership and Career Accelerator

3 unit(s)

This course is a foundational course designed to begin preparing students in their sophomore year or first year of transfer to SJSU to practice the leadership habits of mind and workplace skills needed to thrive in 21st century workplaces. Given the increasingly competitive, and globalized job marketplace, this course enables participants to cycle through rounds of interactive experiences and practice to acquire "hard" and "soft" skills needed to succeed. Students will apply these skills in real-life leadership situations and build meaningful networks of peers and adults, all while activating their personal assets and deepening their sense of self and community.

Misc/Lab: 2 hours lecture/ 2 hours lab

Prerequisite(s): ENGL 1A

Grading: Letter Graded

Cross-listed with UNVS 75. Science is responsible for scheduling.

SCI 90 - Success as Transfer Students

2-3 unit(s)

Emphasis on development of study skills, time management, and personal growth needed to transition from community college to university. Orientation to SJSU policies and procedures; and degree and career options. Guest lecturers, peer advisors, and community building.

Misc/Lab: Lecture 1 hour/activity 2 hours/recitation 1 hour.

Grading: Letter Graded

SCI 101 - Leadership and Career Accelerator

3 unit(s)

Prepares students for the increasingly competitive, globalized job marketplace. Through online, peer learning, interactive experiences, and reflection, students build meaningful networks, discover their innate leadership, and cultivate the hard and "soft" skills and habits of mind needed to thrive in twenty-first century workplaces and make positive impact through their careers upon graduation. Aimed at students in their sophomore or junior year or first year of transfer, though all students of all majors can participate.

2 hours Lecture/2 hours Activity.

Prerequisite(s): ENGL 1A or ENGL 1AS with a grade of "C-" or better or complete GE Area A2 with a grade of "C-" or better.

Grading: Letter Graded

Note(s): Why take UNVS 101?

Cross-listed with UNVS 101. Science is responsible for scheduling.

SCI 157SL - Community Action/Community Service

3 unit(s)

A campus-wide service learning program with opportunities for direct involvement with local community services, both off campus and on campus. Weekly seminars held on campus or at the field site, plus four to six hours of community service work per week at the field site.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with COMM 157SL / EDUC 157SL / ENGR 157SL / HA 157SL. Communication Studies is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

SCI 180 - Individual Studies

1-4 unit(s)

Work, under guidance, in special fields. Repeatable: Repeatable for credit.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

SCI 184 - Directed Reading

1-4 unit(s)

Assigned readings of selected books, journals and special papers chosen to fill gaps in training or to introduce new fields. Evaluation through weekly reports and conferences.

Prerequisite(s): Instructor consent.

Grading: Credit/No Credit

SCI 299 - Master's Thesis

1-6 unit(s)

Thesis development for Plan A MA Natural Science students, to be carried out under direct supervision of a faculty member and committee. Seminar presentation required upon final completion of thesis. Repeatable: Repeatable for credit.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Advancement to candidacy for the master's degree and selection of a thesis committee.

Grading: Mandatory Credit/No Credit/RP

Science Education

SCED 5 - Sustainability, Human Development, and the Earth

3 unit(s)

Introductory course examining the role and interaction of the natural world on the physiological, social, and psychological development of human beings within the context of the environmental, social, and academic community system.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Cross-listed with GEOL 5. Geology is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

SCED 174 - Science Pedagogy for Learning Assistants

3 unit(s)

Learning Assistants (LAs) investigate how people learn and how to support learning as they are immersed in teaching roles in the San José community. Integrates educational theory, pedagogy, content, and practice by focusing on practical concerns and theoretical models of learning.

Lecture 2 hours/Activity 3 hours.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

SCED 175 - Classroom Experiences in Science Teaching

1 unit(s)

The goal of this hybrid online/face-to-face course is to provide students with the opportunity to complete their 45 hours of science teaching observation in California public schools while also reflecting on teaching and learning practices. The course will emphasize the multi-faceted aspects of the teaching profession and most importantly will provide a forum for sharing experiences with other students who are similarly placed. The course will fulfill pre-professional teaching observation experience required of most Single Subject Teacher Credential Programs.

Prerequisite(s): Sophomore or upper division standing. Not available to Open University Students.

Grading: Letter Graded

SCED 184Y - Student Teaching II - Classroom Teaching

4 unit(s)

Minimum 80-120 class hours of classroom, lab or field teaching in appropriate single subject, grades K-12 and related teaching activities/seminar.

Prerequisite(s): SCED 273 (Science Credential Candidates must complete SCED 273 with a grade of "B" or better, "B-" not accepted) and joint approval of the Science Education Program and the Secondary Education Department. Not available to Open University Students.

Grading: Credit/No Credit

SCED 184Z - Student Teaching III - Classroom Teaching

4 unit(s)

Minimum 80-120 class hours of classroom, lab or field teaching in appropriate single subject, grades K-12 and related teaching activities/seminar.

Prerequisite(s): SCED 273 (Science Credential Candidates must complete SCED 273 with a grade of "B" or better, "B-" not accepted) and joint approval of the Science Education Program and the Secondary Education Department. Not available to Open University Students.

Grading: Credit/No Credit

Note(s): May be in different subject/school and will be at a different grade level.

SCED 205 - Methods of Research

3 unit(s)

Introduction to techniques and procedures of scientific research. Each student is required to prepare and defend a working outline of a master's thesis or project in his or her area of concentration.

Grading: Letter Graded

Note(s): Introductory course in statistics or equivalent recommended.

SCED 220 - Theories and Practices in Science Education

3 unit(s)

Introduction to classic and cutting-edge learning theories in science education. Explore research-based understandings of science learning with implications for inquiry and practice. Emphasis on developing expertise in a science education area of interest and contextualizing questions and problems of teaching and learning in educational literature.

Misc/Lab: Lecture/seminar 3 hours.

Satisfies GEAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): Teaching experience preferred. Must be taken during first year in program. This course satisfies graduate-level GEAR in this master's program.

SCED 230 - Science Education Data Analysis

3 unit(s)

Introduction to science education data analysis methods and techniques. Students will engage in both quantitative and qualitative data analysis.

Prerequisite(s): Instructor consent required.

Grading: Letter Graded

SCED 255 - Advanced Natural Science

1-3 unit(s)

Selected topics in natural science or science education.

Repeatable for credit when topic changes.

Grading: Letter Graded

SCED 273 - Secondary School Science

3 unit(s)

Designed to engage teacher candidates (TC) in the methods, learning theories, practices, and instructional and pedagogical approaches for teaching justice-centered science in secondary schools. TCs develop strategies, master techniques, and gain practice-based experience in the promotion of inclusive, inquiry-based classrooms. In addition, TCs learn to design equitable unit and lesson plans that build from young people's experiences and sense making practices, engage in the Next Generation Science Standards (NGSS) and use technology to enhance the learning environment. Theory and practice, instructional techniques, and materials for science in the secondary schools.

6 hours Activity.

Prerequisite(s): CSET Subtest I (test code 215) covers general science content and CSET Subtest II (test codes 217-220) select the subtest II that fits candidate's area of concentration. Life Sciences (test code 217), Chemistry (test code 218), Earth and Space Sciences (test code 219), Physics (test code 220).

Grading: Letter Graded

SCED 285 - Seminar

3 unit(s)

Provides a format for the presentation and discussion of original work by faculty, guest investigators and graduate students.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

SCED 297 - Science Education Research

1-3 unit(s)

Research in science education under the supervision of a faculty member associated with the science education program.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

SCED 298 - Research

1-6 unit(s)

Project development for MS Science Education students, to be carried out under direct supervision of a faculty member and committee. Seminar presentation required upon final completion of project.

Course may be repeated for credit for up to 6 units.

Grading: Mandatory Credit/No Credit/RP

SCED 375 - Colloquium in Science Education

2 unit(s)

Resources and innovations for science curriculum development and instruction. An interface with people and facilities which can enhance Bay Area science instruction. California Teaching Performance Assessment (Cal TPA) preparation and guidance.

Corequisite(s): SCED 184Y or SCED 184Z.

Grading: Credit/No Credit

Note(s): Also open to experienced teachers.

SCED 1290R - Culminating Experience Supervision

1 unit(s)

Continued Work on Thesis

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Secondary Education

EDSC 153 - Student Teaching/Seminar for Interns

2 unit(s)

Third of three courses required of second year interns. Action research, peer observation, and self reflection serve as vehicles for examining how instructional design affects student outcomes in content literacy. Includes classroom observations and professional development activities.

Prerequisite(s): EDSC 152.

Grading: Credit/No Credit

EDSC 162 - Language/Literacy Development of L2 Learners

3 unit(s)

Principles of language structure, variation, and usage. First and second language acquisition theories and application of teaching in diverse secondary classrooms. Social and psychological influences on linguistic behavior of students. Cultural and political issues affecting language attitudes.

Prerequisite(s): Program Director consent.

Grading: Letter Graded

EDSC 172A - Social, Philosophical Multicultural Fdn

3 unit(s)

Social, cultural, historical and philosophical concepts in secondary teacher education: Application to problems of curriculum and instruction in multilingual, multicultural classrooms.

Prerequisite(s): Program director consent.

Grading: Letter Graded

EDSC 173 - Psychological Foundations of Secondary Teacher Education

3 unit(s)

Application of developmental cognitive and socio-cultural theories of adolescent psychology and culture as a rationale for teaching and learning.

Prerequisite(s): Program director consent.

Grading: Letter Graded

EDSC 184P - Introduction to Student Teaching

1 unit(s)

Single Subject Credential Teacher candidates engage in a supervised field experience in a public middle school or high school that enables them to complete some of the course requirements for EDTE 208.

Activity 2 hours.

Course may be repeated for up to 2 units for credit.

Prerequisite(s): Enrolled in single subject credential program.

Grading: Credit/No Credit.

EDSC 184X - Student Teaching I

6 unit(s)

Supervised teaching of public middle or high school students. In-class experience ranging from observation to classroom teaching. Emphasis on application of theories examined in foundations courses.

Prerequisite(s): Program director consent.

Grading: Credit/No Credit

EDSC 184Y - Student Teaching II

2-6 unit(s)

Minimum 80-120 class periods of classroom teaching in grades K-12. Related school activities.

Prerequisite(s): Joint approval of major advisor, program director and field placement coordinator.

Grading: Credit/No Credit

EDSC 184Z - Student Teaching III

1-6 unit(s)

Minimum 80-120 class periods of classroom teaching in grades K-12. Related school activities.

Prerequisite(s): Joint approval of major advisor, program director and field placement coordinator.

Grading: Credit/No Credit

EDSC 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Social Science

SOCS 15 - Statistical Applications in the Social Sciences

3 unit(s)

Introduction to statistical applications, particularly statistical inference, including central tendency, variation, normal distributions, probability, estimation, hypothesis testing, measures of association, correlation, linear regression and the analysis of variance.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III, or for Category IV, completion of a GE Area B4 course with a grade of C- or better. Corequisite weekly supported instruction required for Enrollment Category M-III, and recommended for M-II.

Grading: Letter Graded

Cross-listed with SOCI 15. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.
Sustainability Related

SOCS 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

History is responsible for scheduling.

SOCS 137 - California History for Teachers

3 unit(s)

Interdisciplinary course to prepare future teachers to teach California history from a wide range of social science perspectives. Includes the diverse history of California's people, politics, and cultures and their impact on the nation and the world. Create and implement teaching strategies for use in classrooms.

Grading: Letter Graded

Note(s): Not acceptable for Economics majors, except double majors; acceptable for Economics minors.

History is responsible for scheduling.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

SOCS 138 - US History for Teachers

3 unit(s)

Interdisciplinary course to prepare future teachers to teach the United States history from a wide range of social science perspectives. Study of the diverse history of the people, politics, and cultures of the US while examining movements for social justice. Students create and implement engaging strategies for use classrooms.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

History is responsible for scheduling.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

SOCS 139 - World History for Teachers

3 unit(s)

This interdisciplinary course is intended to prepare future teachers to teach world history from a wide range of social science perspectives. Students will compare the diverse ideas, values, and histories of various world cultures. Students will create and implement engaging teaching strategies for use in their own future classrooms.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): HIST 15 and POLS 15 or AAS 33A and AAS 33B. Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

History is responsible for scheduling.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

SOCS 177 - Sociology of Education

3 unit(s)

This course applies sociology of education theory to the analysis of the relationship between society and education. The course focuses on race/ethnicity, class and gender in the U.S. educational system.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with SOCI 177. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.

Sustainability Related - SDG 4: Quality Education

SOCS 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

History is responsible for scheduling.

SOCS 195 - Social Science Teacher Preparation

3 unit(s)

In this capstone course Social Science Teacher Preparation majors will synthesize their learning about the theory and practice of Social Science education through the completion of a major portfolio project. Required for majors.

Prerequisite(s): SOCS 177; completed graduation application; or instructor consent.

Grading: Letter Graded

History is responsible for scheduling.

SSCI 90 - Successfully Negotiating Social Science

1 unit(s)

Course designed to help students in the College of Social Sciences, enabling them to learn the skills and

knowledge necessary to become successful students. Students will explore the ways in which different social scientists see, research, analyze, understand and communicate.

Grading: Letter Graded

Social Science Education

SSED 184Y - Student Teaching II - Classroom Teaching

4 unit(s)

Minimum 80-120 class periods of classroom, teaching lab or field teaching in appropriate single subjects, grades K-12 and related teaching activities/seminar.

Prerequisite(s): SSED 378 with a passing grade of "B" or better (B- not acceptable) and joint approval of major and Education departments.

Grading: Credit/No Credit

SSED 184Z - Student Teaching III - Classroom Teaching

4 unit(s)

See SSED 184Y for course description.

Grading: Credit/No Credit

Note(s): May be in different subject/school and will be at a different grade level.

SSED 378 - Social Science Methods

3 unit(s)

For prospective secondary teachers who plan to teach in the social science field. A prerequisite to student teaching.

Grading: Letter Graded

Social Work

SCWK 10 - Introduction to Social Welfare and Social Work

3 unit(s)

Social welfare institutions and the social work profession: its development, knowledge base, value system and specific areas of direct practice.

Grading: Letter Graded

SCWK 100W - Writing Workshop

3 unit(s)

Focuses on developing and enhancing writing and presentation skills vital to the social work profession in the following areas: research, grant writing, clinical documentation, and administration.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

SCWK 105 - Social Work and Environmental Justice

3 unit(s)

Explores evidence-based social work practice and policies to respond to natural and human-influenced domestic and international environmental issues. Provides a social work perspective to environmental issues and its impact on diverse vulnerable populations.

Satisfies SJSU Studies Area R: Earth, Environment, and Sustainability

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter graded.

SCWK 106 - Understanding Diversity Through a Transcultural Lens

3 unit(s)

Enhances understanding of diversity by examining multiple aspects of human expression in cultures and societies outside the US. Using the Transcultural Perspective, students will deepen their knowledge and appreciation of various cultures.

Satisfies SJSU Studies Area V: Cultures and Global Understanding

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter graded.

SCWK 107 - Aging and Society

3 unit(s)

Social, psychological and physiological aging processes. Implications of aging for individuals and societies, with emphasis on issues related to diversity, equality and gender in the U.S.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with GERO 107 / PH 107. Social Work is responsible for scheduling.

Sustainability Focused - SDG 10: Reduced Inequalities

SCWK 110 - Foundations of Social Work Practice

3 unit(s)

Introduction to the history, mission, values, skills and knowledge base of generalist social work practice within a transcultural perspective. Focus on social work practice with emphasis on those populations-at-risk who are disenfranchised and marginalized.

Prerequisite(s): Junior standing, Social Work majors only.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 111 - Generalist Social Work Practice I

3 unit(s)

Knowledge, values and skills for generalist social work practice utilizing problem-solving methods with systems of all sizes. Focus on developing professional relationships, defining issues, communication skills, collecting data and assessing individuals from diverse backgrounds interacting with their environments.

Prerequisite(s): SCWK 110, SCWK 120, SCWK 130, SCWK 140. Junior or Senior standing. Allowed Declared Majors: Social Work.

Corequisite(s): SCWK 141.

Grading: Letter Graded

SCWK 112 - Generalist Practice II

3 unit(s)

Knowledge, values and skills for generalist social work practice with emphasis on families, groups, organizations and communities. Focus on transactions to optimize social well-being and empowerment of individuals, families and communities utilizing strengths and transcultural perspectives.

Prerequisite(s): SCWK 111 (with a grade of "C" or better).

Corequisite(s): SCWK 142.

Grading: Letter Graded

SCWK 120 - Social Welfare Institutions and Policies I

3 unit(s)

Development of social work as a profession, including mission, values, ethics. Development and changes in the philosophy, legislative base and structures for social services as these affect social and economic justice and impact health and well-being.

Prerequisite(s): Junior standing and Social Work majors only.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 121 - Social Welfare Institutions and Policies II

3 unit(s)

Methodology and framework for analyzing social policy and understanding institutional discrimination, particularly related to populations-at-risk and other disenfranchised groups. Political and organizational processes to influence policy development.

Prerequisite(s): SCWK 120, junior standing, Social Work majors only.
Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 130 - Human Behavior in the Social Environment I

3 unit(s)

Theories and knowledge of bio-psycho-social development from birth to old age. The dynamics of interacting social systems and culture on human development. Theories and research on risk and resilience. Human diversity and populations-at-risk emphasized.

Prerequisite(s): Junior standing, Social Work majors only.
Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 131 - Human Behavior in the Social Environment II

3 unit(s)

Theories and knowledge about families, groups, organizations, and communities from a systems perspective. The impact of discrimination, economic deprivation and oppression on populations-at-risk. Emphasis on the promotion of optimal health and well-being.

Prerequisite(s): Junior Standing. Social Work majors only.
Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 140 - Introduction to Field Practicum

3 unit(s)

Direct involvement with community services to provide the student with exposure to clients/client systems prior to Field Practicum I. Six to eight hours weekly in community-based agencies and on-campus seminars.

Pre/Corequisite(s): SCWK 110 and Social Work majors only.
Grading: Credit/No Credit

SCWK 141 - Field Practicum I

2-5 unit(s)

Generalist social work practice with individuals, families and communities from a transcultural perspective in an agency under supervision. Sixteen hours per week required in placement.

Prerequisite(s): SCWK 110, SCWK 120, SCWK 130 and SCWK 140. Junior or Senior standing. Allowed Declared Majors: Social Work.

Corequisite(s): SCWK 111.

Grading: Credit/No Credit

SCWK 142 - Field Practicum II

2-5 unit(s)

Generalist social work practice in an agency setting continued. Emphasis on individuals, small groups and communities from a transcultural perspective. Sixteen hours per week required in placement.

Prerequisite(s): SCWK 111 and SCWK 141. Junior or senior standing. Allowed Declared Majors: Social Work.

Corequisite(s): SCWK 112.

Grading: Credit/No Credit

SCWK 170 - Introduction to Research Methods

3 unit(s)

Scientific and analytic approaches to building knowledge for social work practice, including ethical issues in social research. Evaluation of service delivery systems using qualitative and quantitative research methodologies.

Prerequisite(s): SCWK 110, SCWK 120, and SCWK 130. Junior standing and Social Work majors only.

Pre/Corequisite(s): STAT 95.

Grading: Letter Graded

SCWK 175 - Social Work Senior Seminar

3 unit(s)

An integrative capstone seminar reviewing current trends, problems and issues confronting the profession. Developments and challenges in California and the country for BA level generalist practitioners evaluated in light of the student's own personal and professional goals.

Pre/Corequisite(s): Social Work majors only; must be taken concurrently with SCWK 112 and SCWK 142; or taken in the semester immediately following completion of SCWK 142, and all other Social Work courses must have been completed.

Grading: Letter Graded

SCWK 180 - Individual Studies

1-4 unit(s)

Individual work on special topics by arrangement.

Prerequisite(s): Department major.

Grading: Credit/No Credit

SCWK 192 - Social Work with Families

3 unit(s)

Exploration of various family forms, cultural factors and dynamics influencing family interaction with agencies and community. Practice strategies include assessment, defining strengths and focusing on interventions to promote health and well-being.

Prerequisite(s): SCWK 110, SCWK 120 or SCWK 130 (or equivalent).

Grading: Letter Graded

SCWK 192I - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

SCWK 200W - Social Work Graduate Writing Course

3 unit(s)

Course is a graduate writing course with emphasis on the development of English writing skills for academic purposes. Special emphasis is given on School of Social Work's (SJSU) Transcultural perspective.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

SCWK 202 - Social Policy and Services: History and Values

3 unit(s)

History of social welfare and work with emphasis on diverse populations, particularly Latinos/as, African Americans and Asian Americans. Social policy and social work values in relation to practice issues and social services.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 204 - Social Policy Analysis

3 unit(s)

Frameworks for analyzing social policies using principles of social and economic justice. The role of policy in helping or deterring people in attaining well-being. Focus on diverse populations and populations-at-risk.

Prerequisite(s): SCWK 202.

Grading: Letter Graded

SCWK 212 - Human Behavior in Social Environment I

3 unit(s)

Systems and ecological models presented with the transcultural perspective provide the primary theoretical foundation. Life course perspective is applied from infancy to end of adult life cycle to understand behaviors of individuals and families with special emphasis on marginalized groups.

Grading: Letter Graded

SCWK 214 - Human Behavior in Social Environment II

3 unit(s)

Systems and ecological models provide the primary theoretical foundation. Special focus is given to transcultural perspective within the contexts of mezzo (families and small groups) and macro social work (organizations and communities) with marginalized populations.

Prerequisite(s): SCWK 212.

Grading: Letter Graded

SCWK 215 - Advanced Standing Bridge Integrated

4 unit(s)

Summer bridge course for the Advanced Standing Masters of Social Work Program. It is intended to supplement the foundational knowledge, skills, and values developed by qualified students in respective BSW program.

Grading: Letter Graded

SCWK 220 - Transcultural Generalist Practice I

3 unit(s)

Transcultural generalist practice with client systems, particularly individuals and families, at micro, mezzo and macro levels. Assessment, planning and implementing interventions within a professional relationship, utilizing a strengths perspective, focusing on Latinas/as, African Americans and Asian Americans.

Corequisite(s): SCWK 230.

Grading: Letter Graded

SCWK 221 - Transcultural Generalist Practice II

3 unit(s)

Transcultural generalist practice with client systems, particularly groups, organizations and communities to enhance well-being. Approaches and skills to ameliorate conditions affecting people adversely, particularly those of diverse backgrounds and populations-at-risk. Emphasis on promoting social and economic justice.

Prerequisite(s): SCWK 220 and SCWK 230.

Grading: Letter Graded

SCWK 222 - Transcultural Advanced Generalist Practice I: Family Systems Focus

3 unit(s)

Transcultural advanced generalist practice with an emphasis on family systems, diverse cultural patterns and varying family forms. Assessment of multi-system interactions with communities and organizations, focusing on enhancing the health and well-being of marginalized populations and populations-at-risk.

Prerequisite(s): SCWK 221.

Corequisite(s): SCWK 232.

Grading: Letter Graded

SCWK 223 - Transcultural Advanced Generalist Practice II: Community Systems Focus

3 unit(s)

Methods of community intervention at multiple levels focused on empowerment and developing the strengths of diverse groups, particularly Latino/a, African American, Asian American and other oppressed and marginalized populations. Includes community social work, assessment and interventions.

Prerequisite(s): SCWK 221.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 224 - Advanced Generalist Practice With Spanish Speaking Populations

3 unit(s)

Analysis of culturally relevant services to linguistic minority Spanish-speaking population from a transcultural generalist perspective. Skills to include Spanish language interventions appropriate for cultural access, appropriate assessment, individual, family and group interventions and advocacy for client systems at all levels.

Prerequisite(s): SCWK 221.

Grading: Letter Graded

SCWK 230 - Social Work Practicum I

1-6 unit(s)

Development of transcultural practice skills with families, groups and individuals in their social contexts. Emphasis on developing professional roles and relationships, applying multi-system assessment and interventions, particularly with Latino/a, African American and Asian American clients/client systems.

Course may be repeated for credit for up to 18 units.

Prerequisite(s): Allowed Declared Majors: Social Work.

Corequisite(s): SCWK 220.

Grading: Credit/No Credit

SCWK 231 - Social Work Practicum II

1-6 unit(s)

Development of skills to differentially assess the strengths and capacities of interacting individuals, families, groups, organizations and communities. Application, termination and evaluation of problem-solving interventions from a transcultural generalist practice perspective.

Course may be repeated for credit for up to 18 units.

Prerequisite(s): SCWK 230. Allowed Declared Majors: Social Work.

Corequisite(s): SCWK 221.

Grading: Credit/No Credit

SCWK 232 - Social Work Practicum III

1-6 unit(s)

Development of advanced generalist practice skills with individuals, families, groups, organizations and communities from a transcultural perspective emphasizing family, community and policy practice. Development of skill to use self effectively with diverse clients, colleagues and community members from various backgrounds.

Course may be repeated for credit for up to 18 units.

Prerequisite(s): SCWK 231. Allowed Declared Majors: Social Work.

Corequisite(s): Advanced Courses.

Grading: Credit/No Credit

SCWK 233 - Social Work Practicum IV

1-6 unit(s)

Development of advanced generalist practice skills with the aged, children and youth, health/mental health or educational settings. Developing culturally competent skills to assess, plan, implement and evaluate interventions from transcultural and strengths perspectives to address family and community well-being.

Course may be repeated for credit for up to 18 units.

Prerequisite(s): SCWK 232. Allowed Declared Majors: Social Work.

Corequisite(s): Advanced Courses.

Grading: Mandatory Credit/No Credit/RP

SCWK 240 - Research Methods and Design

3 unit(s)

Scientific method and problems of knowledge. Basic concepts and models of research methodology, qualitative research, program and practice evaluation in social work. Critical analysis of existing research on ethnic minorities and other populations-at-risk.

Grading: Letter Graded

Sustainability Related - SDG 1: No Poverty

SCWK 242 - Research Methods, Data Analysis and Evaluation

3 unit(s)

Basic concepts and models for research methodology applied to the analysis of data in social work. Emphasis on quantitative analysis using microcomputers.

Prerequisite(s): SCWK 240.

Grading: Letter Graded

SCWK 243 - Advanced Standing SW Bridge - Grad

2 unit(s)

Summer bridge course for the Advanced Standing Masters of Social Work Program. It is intended to

supplement the foundational knowledge and skills needed for using research evidence to inform practice and policy.

Grading: Letter Graded

SCWK 245 - Management in Human Services

3 unit(s)

The organization and continuous operation of services delivery systems including the functions of management, decision-making, communication, authority, delegation, planning and staffing.

Grading: Letter Graded

Note(s): An elective.

SCWK 250 - Policy Practice in Health and Aging

3 unit(s)

Critical analysis of the impact of policies related to health and aging particularly those who are Latino/a, African American and Asian American. Assessment of organizations and policy implementation. Development of strategies to promote well-being and social change.

Prerequisite(s): SCWK 204.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 251 - Social Work in Health and Aging

3 unit(s)

Knowledge and skill development for practice from a transcultural multi-systems perspective in aging and health care settings. Emphasis on Latino, African American, Asian American, and other diverse client systems. Conceptual frameworks for practice at micro, mezzo, and macro levels.

Prerequisite(s): SCWK 220 and SCWK 221.

Grading: Letter Graded

Cross-listed with GERO 251. Social Work is responsible for scheduling.

SCWK 260 - Policy Practice in Child and Family Welfare

3 unit(s)

Critical analysis of the impact of social policies on children and families, particularly those who are Latino/a, African American and Asian American. Assessment of organizational structures and policy implementation. Development of strategies to promote well-being and social change.

Prerequisite(s): SCWK 204.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 261 - Social Work Practice with Children

3 unit(s)

Skills and knowledge in working with high-risk children and families from an advanced generalist perspective. Focus on understanding of child and family development as well as assessment and intervention at various levels in a transcultural context.

Prerequisite(s): SCWK 221.

Grading: Letter Graded

Note(s): An elective.

SCWK 262 - Social Work Practice with Adolescents

3 unit(s)

Skills and knowledge in working with diverse populations of high-risk adolescents from an advanced generalist perspective. Focus on understanding adolescent and family development as well as assessments and interventions at various levels in a transcultural context.

Prerequisite(s): SCWK 221.

Grading: Letter Graded

Note(s): An elective.

SCWK 263 - Social Work and the Law

3 unit(s)

Analytical skills to understand the legal system, its functions, organization, jurisdiction and case processing methods. An examination of the legal environment of social work practice in selected settings: domestic violence, child abuse and neglect, sexual abuse and education.

Grading: Letter Graded

Note(s): An elective.

SCWK 265 - Child Welfare Practice in Public and Government Systems

3 unit(s)

This course focuses on advanced child welfare practice relevant to public and government settings. It provides a transcultural, multi-systems approach to working with children, youth, families and communities within the child welfare system, and as they intersect with community-based organizations.

Prerequisite(s): SCWK 231

Corequisite(s): SCWK 232

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SCWK 267 - Advancing Child Welfare Practice Skills Through Simulation

1 unit(s)

Advanced practice seminar that utilizes a simulation model to provide depth and breadth in knowledge and skill acquisition regarding engagement, assessment, and intervention that promote child safety and the well-being of children and families in the child welfare system.

Prerequisite(s): SCWK 231

Corequisite(s): SCWK 232

Grading: Credit/No Credit

SCWK 272 - Social Work in Educational Settings

3 unit(s)

Examines the promotion of well-being and social change, with emphasis on attainment of educational goals. Individual and family needs are explored in the context of educational policies, organizational dynamics, pupil adjustment and assessment, life cycle development, and advocacy.

Prerequisite(s): SCWK 212, SCWK 214, SCWK 220, SCWK 221.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

SCWK 280 - Policy Practice in Mental Health

3 unit(s)

Critical analysis of the impact of mental health policies on populations-at-risk, particularly those who are Latina/o, African American, and Asian American. Assessment of organizations and policy implementation. Development of strategies to promote well-being and social change.

Prerequisite(s): SCWK 204.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

SCWK 281 - Social Work in Mental Health

3 unit(s)

Knowledge and skill development for advanced generalist practice in mental health settings. Emphasis on Latino/a, African American and Asian American clients/client systems interacting with service delivery systems. Conceptual frameworks for practice at micro, mezzo and macro levels. Social Work program elective.

Prerequisite(s): SCWK 221.

Grading: Letter Graded

SCWK 283 - Psychopharmacology for Social Workers

3 unit(s)

Historical trends and specific cultural, ethnic, gender and age related issues of alcohol and drug use are presented. Psychotherapeutic drugs and the pharmacologic basis of medicines for psychiatric disorders and culturally competent treatment interventions for substance abuse will be discussed. Social Work program elective.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

SCWK 285 - Social Work and Social Problems

3 unit(s)

Examination of selected social problems related to the direct practice of social work that focus on in-depth knowledge of the problems and of the required direct practice skills and techniques.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

Note(s): An elective.

Sustainability Related - SDG 1: No Poverty

SCWK 285ITL - Social Work and Social Problems: International Experience

3 unit(s)

Examination of selected social problems related to the direct practice of social work that focuses on in-depth knowledge of the problems and of the required direct practice skills and techniques across cultures.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

SCWK 287 - Advanced Generalist Practice in Substance Abuse

1-3 unit(s)

An examination of clinical, policy, and practice issues regarding abuse and dependence of alcohol and other drugs. Analysis and utilization of micro, mezzo and macro considerations related to prevention, harm reduction, drug policies, and current intervention models and treatment approaches.

Grading: Letter Graded

Note(s): An elective.

SCWK 298A - Special Study A

1-4 unit(s)

Planning and implementation of research emphasizing culturally appropriate measures and design strategies. First part of a two-part special project course in which students produce a professionally written project demonstrating an understanding of the knowledge base underlying social work issues and appropriate interventions.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): SCWK 242

Grading: Credit/No Credit/Incomplete.

SCWK 298B - Special Study B

1-4 unit(s)

Planning and implementation of research emphasizing culturally appropriate measures and design strategies. Students continue their work from ScWk 298 A to produce a professionally written project demonstrating an understanding of the knowledge base underlying social work issues and appropriate interventions.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): SCWK 298A.

Grading: Mandatory Credit/No Credit/RP

SCWK 299 - Master's Thesis

1-4 unit(s)

Repeatable for a total of 4 units.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Advancement to candidacy for the master's degree; approval of the college's research committee.

Grading: Mandatory Credit/No Credit/RP

Sociology

SOCI 1 - Introduction to Sociology

3 unit(s)

How does society affect individual behavior and how does individual behavior affect society? Influence of social institutions and arrangements (family, school, workplace, politics, etc.) on roles, groups, values. Basic sociological theories and methods. Careers, specializations. Required for majors, minors.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

SOCI 15 - Statistical Applications in the Social Sciences

3 unit(s)

Introduction to statistical applications, particularly statistical inference, including central tendency, variation, normal distributions, probability, estimation, hypothesis testing, measures of association, correlation, linear regression and the analysis of variance.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I, M-II, or M-III, or for Category IV, completion of a GE Area B4 course with a grade of C- or better. Corequisite weekly supported instruction required for Enrollment Category M-III, and recommended for M-II.

Grading: Letter Graded

Cross-listed with SOCS 15. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.
Sustainability Related

SOCI 57 - Community Involvement and Personal Growth

3 unit(s)

Human development in community context, with an emphasis on civic responsibility. The influence of community engagement on individual physiological, social/cultural, and psychological well-being. Participation in a service-learning project in a multicultural organization.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

Sociology and Interdisciplinary Social Sciences is responsible for scheduling.
Sustainability Related - SDG 1: No Poverty

SOCI 80 - Social Problems

3 unit(s)

Sociological analysis of selected contemporary social problems such as housing and homelessness, economy and employment, environment and consumerism, family and divorce, crime and drugs, politics and media, race and gender, wealth and poverty, war and peace. Required for majors.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Sustainability Focused - SDG 1: No Poverty

SOCI 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

SOCI 100W - Writing Workshop

3 unit(s)

Practice in improvement of writing and research skills appropriate to the field of sociology, including formal

reports, journals and articles.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): SOCI 1; A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: Sociology; Behavioral Science; Chicana Chicano Studies; Women, Gender, and Sexuality Studies, and Asian American Studies.

Grading: Letter Graded.

Note(s): Required for Sociology Majors. Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

SOCI 101 - Social Theory

3 unit(s)

Comparative analysis of micro and macro sociological theories and their origins, including, but not limited to, conflict theories, consensus theories, structural functionalism, symbolic interaction and recent theoretical developments. Required for majors.

Prerequisite(s): SOCI 1 (or equivalent) and upper division standing. Allowed Declared Majors: Sociology and Behavioral Studies only. All other majors must have instructor consent.

Pre/Corequisite(s): SOCI 100W.

Grading: Letter Graded

SOCI 104 - Quantitative Research Methods

3 unit(s)

Quantitative research methods including survey research design, hypothesis formulation, questionnaire and interview design, scaling, sampling and data preparation and SPSS analysis. Completion of a class research project plus individual research reports. Required for majors.

Prerequisite(s): SOCI 1 or equivalent, SOCI 15 or approved Statistics course from another school; SOCI 100W, SOCI 101 and upper division standing.

Grading: Letter Graded

Sustainability Related

SOCI 105 - Qualitative Research Methods

3 unit(s)

Philosophy and logic of research design, interviewing techniques, field methods, issues of participant observation, theoretical perspectives, content analysis and qualitative microcomputer techniques. Required for Sociology majors.

Prerequisite(s): SOCI 1 or equivalent, SOCI 100W, SOCI 101 and upper division standing.

Grading: Letter Graded

SOCI 105B - Advanced Qualitative Research Methods

3 unit(s)

Involves planning and conducting an in-depth research project utilizing interviews and/or participant observation. Students will design research project, collect data and take field-notes, code and analyze data, and write-up results. Project may involve exploration of a local issue.

Prerequisite(s): SOCI 1, SOCI 100W, SOCI 101 and SOCI 105.

Grading: Letter Graded

SOCI 116 - Global Society

3 unit(s)

Examination of global social issues, evaluation of the impact of change on world communities and analysis of the response of specific groups to emerging problems and opportunities. Required for majors.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

SOCI 118 - Sociology of Human Rights and Social Justice

3 unit(s)

Analyze meanings and practices of human rights violation and promotion by exploring the social consequences of issues such as war crime, sexism, migrant rights, and social displacement and by reflecting on prevailing and alternative institutions for social justice.

Prerequisite(s): SOCI 1 or equivalent

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

SOCI 120 - Contemporary Social Issues

3 unit(s)

A current issue in contemporary society. Content differs each semester. Repeatable for 6 unit maximum of SOCI 120, SOCI 123 or any combination.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

SOCI 127 - Community-Based Participatory Research

3 unit(s)

This course integrates interdisciplinary theory and practice in developing a situated understanding of community-based participatory research (CBPR) toward redressing environmental inequities. Students will apply these theories and practices in their own environmental research and advocacy projects regarding local environmental issues.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

Cross-listed with ENVS 127. Environmental Studies is responsible for scheduling.

SOCI 140 - Sociology of Media

3 unit(s)

Examines the historical development of popular mass media and its role in contemporary society. Explores the relationship between culture, social behavior, and various media forms. Analyzes how gender, race, class, and sexuality have been depicted and represented in media images.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

SOCI 141 - Environmental Sociology

3 unit(s)

This course will analyze how human beings interact with their environment from both macro and micro sociological perspectives. The course will address a number of other relevant topics, including environmental classism, environmental racism and policy responses to environmental problems.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

SOCI 142 - Critical Native American Studies

3 unit(s)

Investigation of current and historical issues Indigenous peoples in the United States face or have faced. Unpacks the complex relationship Native nations have developed with the United States, and the impact the government-to-government relationship has on Indigenous societies.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

SOCI 143 - Feminist Perspectives on Gender and Education

3 unit(s)

The role of gender in the educational system in the United States from both a historical and contemporary context. Focus on the significance of schools as the primary socializing institution for boys and girls.

Prerequisite(s): Junior standing or instructor consent.

Grading: Letter Graded

SOCI 144 - Education for Liberation

3 unit(s)

Critical and sociological examination of attempts to address inequalities and disparities within community-oriented learning programs and movements. Focus on nonformal learning programs associated with workers; education, adult and lifelong education (including anti-literacy and popular theater), and pro-people popular education (related to national liberation, pro-democracy, human rights, antiracist, pro-migrant, feminist, and youth movements).

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

SOCI 145 - Community Mental Health

3 unit(s)

Comprehensive analysis of community mental health using a socio-ecological framework. Intersection of race, socioeconomic status, gender, sexual orientation, and mental health is examined. Emphasis is on prevention and recovery.

Prerequisite(s): Any 100W or instructor consent.

Grading: Letter Graded

Cross-listed with PH 145 / PSYC 145. Public Health and Recreation is responsible for scheduling.

SOCI 146 - Work, Power, and Leisure

3 unit(s)

Explores power in organizational settings where we work and play, and how those settings affect the family, the economy and communities. Settings examined may include corporations, cooperatives, social change organizations, community organizations, non-profit organizations such as hospitals and schools.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

SOCI 147 - Education and Global Justice

3 unit(s)

Exploration of the relationship between formal education and social justice issues, as well as formulation and evaluation of solutions to educational problems and inequalities. using global, comparative, cross-national, and Third World development evidence.

Grading: Letter Graded

SOCI 148 - Current Topics and Trends in Education

3 unit(s)

Analysis of the current environment of sociology of education from both a macro and micro perspective through sociological, political, philosophical and economic perspectives. Includes the study of qualitative descriptions and quantitative trends of contemporary issues in the field of sociology of education.

Grading: Letter Graded

SOCI 151 - Violence in the Family

3 unit(s)

A sociological examination of violence in families focusing on the causes and consequences of violence and on the ways in which various social institutions and community agencies respond to violence among intimates.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

SOCI 154 - Sociology and Non-Conforming Behavior

3 unit(s)

Sociological analysis of behavior outside of social conventions including crime, mental illness, suicide and chemical dependency.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

Sustainability Focused - SDG 3: Good Health and Well-Being

SOCI 157 - Sociology of Youth Sport

3 unit(s)

Introductory examination of the contemporary social, cultural, and economic significance of youth sport through the lens of various sociological theories. Situates U.S. youth sports within a global context, and examines variations in sporting experiences for youth who differ by race, class, gender, sexuality, religion, and ability. Unpacks how youth sports programs have been used to achieve political ends, and how young athletes have advocated for social justice.

Grading: Letter Graded

SOCI 160 - Immigration and Identity

3 unit(s)

Examination of topics related to immigration and population movements. Includes the historical context of major migrations, legal, political and social issues and debates, opportunities, prejudices, immigrant communities, intergenerational tensions, and social and personal identity pressures.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

SOCI 161 - City Life

3 unit(s)

The city as a setting for diverse lifestyles. Challenges facing urban dwellers and adaptive strategies they take. Comparison of city, suburb and rural countryside as social environments.

Prerequisite(s): Upper Division or instructor consent

Grading: Letter Graded

SOCI 162 - Race and Ethnic Relations

3 unit(s)

Analysis of racial and ethnic groups in American society; contacts and conflicts; prejudice and discrimination; dominant and subordinate group status; social structure of racial and ethnic inequality within society. Comparison of global race and ethnic relations.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

SOCI 163 - Social Change

3 unit(s)

Analysis of causes, consequences and the role of individuals, organizations and social structures in producing social change.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

SOCI 164 - Social Action

3 unit(s)

The tactics and strategies of social action. Topics may include applying social action to the local community, studying current and past U.S. and international social action organizations, or examining theories of social movements. Repeatable once when content changes.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

SOCI 165 - Poverty, Wealth and Privilege

3 unit(s)

An examination of the causes and consequences of inequality along the dimensions of social class, race/ethnicity, gender, citizenship status, and/or sexualities. Approach may be local, national or global.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

SOCI 166 - Medical Sociology

3 unit(s)

Sociological analysis of medical and mental health institutions, values and roles. Patient-doctor interaction, influence of hospital structure on health care, social class and illness, cultural determinants of illness and related areas of old age (gerontology) and death.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

Cross-listed with GERO 166. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.
Sustainability Related - SDG 3: Good Health and Well-Being

SOCI 169 - Political Sociology

3 unit(s)

Analysis of cultural, social and institutional foundations of political policies and actions. Emphasis on patterns affecting political behavior and processes in the industrialized and developing countries.

Prerequisite(s): SOCI 1 or equivalent.

Grading: Letter Graded

SOCI 170 - Sociology of Family

3 unit(s)

Examines the historical development of family in the context of social, cultural, political, and economical inequalities, and how intersections of gender, race, class, nationality, sexuality, and age impact understandings of family and intimacy. Explores relationships within families and new family forms.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

SOCI 171 - Person and Society

3 unit(s)

Analyzes our "self" as socially created and maintained through everyday interactions. Explores how individuals manage and protect self identity in settings, e.g. school, family, work. Effects of race/ethnicity, gender, sexuality, and age on definitions of self and reality.

Prerequisite(s): SOCI 1 or instructor consent.

Grading: Letter Graded

SOCI 172 - Lesbian, Gay, Bi, Transgender Studies

3 unit(s)

Explores lesbian, gay, bisexual, transgender, and intersex communities. Analyzes sexual behavior, attitudes, and identities from historical, cross-cultural, and "insider" and "outsider" perspectives. Presents social reactions to LGBT movements and persons. Includes current stereotypes, misinformation, and movements to achieve equality.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

Sustainability Focused - SDG 10: Reduced Inequalities

SOCI 173 - Socialization and Identity

3 unit(s)

Personality formation in the context of family, social interaction and institutions of socialization such as workplace, family and community. Emphasis on childhood and the social processes that mold basic beliefs and values in the formation of adult identity.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

SOCI 174 - Sexualities

3 unit(s)

Examines diverse social constructions of sexual intimacy, meanings, identities, practices, and power embedded in relationships, communities and organizations. Sociological themes of morality, control, sexual citizenship, science and the production of sexual subjects, and the political economy of sex may be examined.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

SOCI 175 - Sociology of Masculinities and Femininities

3 unit(s)

Examination and analysis of social construction of gender through interaction and social institutions. Explores gender-based identities and how intersections of gender, race, class, and sexuality shape men's and women's experiences. Examines theories of gender and gender-based social movements.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

Cross-listed with WGSS 175. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.

Sustainability Focused - SDG 5: Gender Equality

SOCI 176 - Sociology of Everyday Life

3 unit(s)

Examination of micro-sociology, small group processes, and interactions. Using the framework of Everyday Life, this includes studies of power, status, communication, cooperation, conflict resolution, task performance. Provides understanding of small formal and informal groups, work groups and intimate relationships.

Prerequisite(s): SOCI 1 or instructor consent

Grading: Letter Graded

SOCI 177 - Sociology of Education

3 unit(s)

This course applies sociology of education theory to the analysis of the relationship between society and education. The course focuses on race/ethnicity, class and gender in the U.S. educational system.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with SOCS 177. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.
Sustainability Related - SDG 4: Quality Education

SOCI 178 - Sociology of Childhood

3 unit(s)

Examination of sociological issues, theories, and research on childhood from infancy to adolescence, including the role of social institutions in shaping the childhood experience and the emergence of peer cultures that change societies.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

SOCI 179 - Sociology of Higher Education

3 unit(s)

This course will examine the institution of higher education and its relationship to and with society. The course will address a number of other relevant topics, including educational inequalities, student debt and consequences of policy.

Prerequisite(s): Upper division Standing

Grading: Letter Graded

SOCI 180 - Individual Studies

1-4 unit(s)

Prerequisite(s): Instructor consent and department chair approval.

Grading: Credit/No Credit

SOCI 181 - Service Internship

1-6 unit(s)

Supervised placement in practical situations where sociologists are employed, including correctional services, community planning, industry, research, social action and social welfare agencies.

Prerequisite(s): SOCI 1 or equivalent, SOCI 100W, SOCI 101 and upper division standing, or graduate standing. Department Chair approval.

Grading: Credit/No Credit

SOCI 181B - Sociology Career Capstone

3 unit(s)

Capstone course to expand undergraduate senior opportunities and options. Analyzes trends in sociology; explores employment and careers, reflection and assessment of learning in the major.

Prerequisite(s): SOCI 1, SOCI 100W, SOCI 101, and SOCI 104 or SOCI 105.

Grading: Letter Graded

Note(s): Students must have taken at least one of the required research method courses before enrolling in the capstone course.

SOCI 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

SOCI 193 - Behavioral Science in Practice

3 unit(s)

Capstone workshop for behavioral science majors. Students assess methods and knowledge of anthropology, psychology and sociology, and synthesize them by reflecting upon case studies of individual, organizational, community, and global issues. Emphasis is on cooperative learning, reflection and synthesis of skills and knowledge.

Prerequisite(s): Senior standing. Allowed Declared Major: Behavioral Science or Behavioral Science double major.

Grading: Letter Graded

Cross-listed with ANTH 193 / PSYC 193. Anthropology is responsible for scheduling.

Sustainability Related - SDG 16: Peace, Justice and Strong Institutions

SOCI 199H - Senior Honors Project

1-4 unit(s)

Preparation and writing of an original project. Repeatable for a total of 4 units.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Sociology Honors Program student.

Grading: Mandatory Credit/No Credit/RP

SOCI 200 - Sociological Practice

3 unit(s)

Introduces graduate students to the theoretically informed practice of sociology with a particular emphasis on the analysis of social problems. Covers topics such as program evaluation, community and institutional research, and policy advocacy.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

SOCI 201 - Graduate Sociological Theory

3 unit(s)

Introduction to the theories and concepts sociologists use in the study of society. The course emphasizes contemporary social theories, grounded in the classical canon of Marx, Durkheim, and Weber. Application of theory to contemporary social problems. Content may vary with instructor.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Graduate Standing.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

SOCI 204 - Quantitative Data Analysis

3 unit(s)

Covers foundations of statistical analyses as well as the statistical techniques most commonly practiced by quantitative social science researchers such as univariate descriptive statistics, bivariate relationships, and multivariate modeling.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

SOCI 205 - Seminar in Qualitative Research Methods

3 unit(s)

Involves planning and conducting an in-depth research project utilizing interviews and/or participant observation. Students will design research project, collect data and take field-notes, code and analyze data, and write-up results. Project may involve exploration of a local issue.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

SOCI 223 - Seminar in Sociological Issues

3 unit(s)

Analysis of a current issue in sociology which is not covered by other graduate seminars. Content differs each semester. Repeatable once with advisor consent when content changes.

Grading: Letter Graded

SOCI 262 - Seminar in Race and Ethnic Relations

3 unit(s)

Analysis of sociological theories of race relations and racism, social structural conditions of race and racial identity formation, society's institutional policies and practices that affect racial inequality.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

Sustainability Focused - SDG 16: Peace, Justice and Strong Institutions

SOCI 270 - Seminar in Sociology of Family

3 unit(s)

Comparative analysis of institutional forms and family small group systems including alternative life styles and minority families. Problems of the family. Changes in family roles and in family law.

Prerequisite(s): Graduate Standing

Grading: Letter Graded

SOCI 281 - Internship in Sociology

1-6 unit(s)

Supervised placement in practical situations where sociologists are employed: correctional services, community planning, industry, counseling agencies and others. Course is repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Grading: Credit/No Credit

Note(s): Open to graduate students by arrangement with the department.

SOCI 298 - Special Study

1-4 unit(s)

Advanced individual research and projects. May not be related to thesis topic. Course is repeatable for a total of 4 units.

Course may be repeated for credit for up to 4 units.

Prerequisite(s): Consent of instructor and approval by graduate advisor or department chair.

Grading: Mandatory Credit/No Credit/RP

SOCI 1290R - Culminating Experience Supervision

1 unit(s)

Continuing analysis of data and writing of thesis.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP in a preceding semester for a Thesis or Special Project course.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Software Engineering

SE 116A - Introduction to Computer Graphics

3 unit(s)

Vector geometry, geometric transformations and the graphics pipeline. Basic raster graphics algorithms for drawing discrete lines, clipping, visible surface determination and shading. Display of curves and surfaces. Graphics data structures.

Prerequisite(s): MATH 31 or MATH 31X, MATH 39, CS 146 (with a grade of "C-" or better in each) and previous programming experience in C/C++; Allowed Majors: Computer Science, Data Science, Software Engineering or Applied/Computational Math or instructor's consent.

Grading: Letter Graded

Cross-listed with CS 116A. Computer Science is responsible for scheduling.

SE 116B - Computer Graphics Algorithms

3 unit(s)

In-depth discussion of algorithms and techniques used in computer graphics and their implementation. Topics include: animation, fractals, anti-aliasing, fill algorithms, visible surface algorithms, color and shading, ray tracing, radiosity and texture maps. Substantial programming required.

Prerequisite(s): CS 116A (with a grade of "C-" or better) or instructor consent.

Grading: Letter Graded

Note(s): Offered only occasionally.

Cross-listed with CS 116B. Computer Science is responsible for scheduling.

SE 123A - Bioinformatics I

3 unit(s)

Introduction to algorithms, tools, and databases of Bioinformatics. Biological foundations: central dogma; sequence databases; pairwise alignment algorithms and tools; Blast; phylogenetics. Possible additional topics: protein structure, multiple sequence alignment, next-gen sequencing, epigenetics, CRISPR. Project applying these approaches to real-world problems.

Prerequisite(s): CS 46B or BIOL 31, or instructor consent. Allowed Majors: Computer Science, Data Science, Software Engineering, Biology, Chemistry or MS Bioinformatics.

Grading: Letter Graded

Cross-listed with BIOL 123A / CS 123A. Computer Science is responsible for scheduling.

SE 123B - Bioinformatics II

3 unit(s)

Advanced Bioinformatics algorithms, tools, databases. Biological background; protein structure/function; sequencing technology; sequence identification; transcriptomics; metagenomics; CRISPR. Possible additional topics: functional genomics; protein networks; drug discovery; pathway analysis; immunoinformatics; analysis pipelines; machine learning applications. Project applying advanced approaches to real-world problems.

Prerequisite(s): CS 123A/BIOL 123A/SE 123A; Allowed Majors: Computer Science, Data Science,

Software Engineering, Biology, Chemistry or MS Bioinformatics.

Grading: Letter Graded

Cross-listed with BIOL 123B / CS 123B. Computer Science is responsible for scheduling.

SE 134 - Computer Game Design and Programming

3 unit(s)

Architectures and object-oriented patterns for computer game design. Animation, simulation, user interfaces, graphics, and intelligent behaviors. Team projects using an existing game engine framework.

Prerequisite(s): CS 146 and either CS 151 or CMPE 135 (with a grade of "C-" or better in each); Allowed Majors: Computer Science, Applied and Computational Math, Software Engineering; or instructor consent.

Grading: Letter Graded

Cross-listed with CS 134. Computer Science is responsible for scheduling.

SE 135 - Object-Oriented Analysis and Design

3 unit(s)

Feasibility analysis and system requirements determination, object-oriented design methodology, and information systems design using object-oriented modeling techniques. Emphasis on both theoretical and practical aspects of object-oriented systems analysis and design. Team-based design project.

Prerequisite(s): For SE Majors: CS 46B or for others CMPE 126. See SJSU Catalog for detail list of prerequisites

Grading: Letter Graded

Cross-listed with CMPE 135. Computer Engineering is responsible for scheduling.

SE 137 - Wireless Mobile Software Engineering

3 unit(s)

Mobility analysis, design principles, techniques, and methods for software systems on a variety of wireless and mobile Internet based computing and communication platforms, such as advanced pocket/tablet PCs, GPS, Bluetooth, Infrared, Wi-Fi, and RFID. Design multi-disciplined mobile project.

Prerequisite(s): CMPE 131. Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

Cross-listed with CMPE 137. Computer Engineering is responsible for scheduling.

SE 139 - Fundamentals of Data Mining

3 unit(s)

Introduction to data management and data mining, data preprocessing, OLAP and data warehousing, frequent pattern mining and association rules, clustering, classification, web mining, web search, recommender systems, social network analysis.

Prerequisite(s): CMPE 126 or CS 146 (with C- or better). Computer Engineering or Software Engineering Majors Only.

Grading: Letter Graded

Cross-listed with CMPE 139. Computer Engineering is responsible for scheduling.

SE 152 - Programming Paradigms

3 unit(s)

Programming language syntax and semantics. Data types and type checking. Scope, bindings, and environments. Functional and logic programming paradigms, and comparison to other paradigms. Extensive coverage of a functional language.

Prerequisite(s): CS 151 or CMPE 135 (with a grade of "C-" or better); Computer Science and Software Engineering Majors only.

Grading: Letter Graded.

Cross-listed with CS 152. Computer Science is responsible for scheduling.

SE 153 - Concepts of Compiler Design

3 unit(s)

Theoretical aspects of compiler design, including parsing context free languages, lexical analysis, translation specification and machine-independent code generation. Programming projects to demonstrate design topics.

Prerequisite(s): CS 47 or CMPE 102, CS 146, and CS 154 (with a grade of "C-" or better in each); Allowed Major: Computer Science only; or instructor consent.

Grading: Letter Graded

Cross-listed with CS 153. Computer Science is responsible for scheduling.

SE 154 - Formal Languages and Computability

3 unit(s)

Finite automata, context-free languages, Turing machines, computability.

Prerequisite(s): MATH 42 or MATH 42X and CS 46B (with a grade of "C-" or better in each); Allowed Majors: Computer Science, Computer Science and Linguistics, or Software Engineering.

Grading: Letter Graded.

Cross-listed with CS 154. Computer Science is responsible for scheduling.

SE 155 - Introduction to the Design and Analysis of Algorithms

3 unit(s)

Algorithm design techniques: dynamic programming, greedy algorithms, Euclidean and extended Euclidean algorithms, Discrete and Fast Fourier transforms. Analysis of algorithms, intractable problems and NP-completeness. Additional topics selected from: selection algorithms and adversary arguments, approximation algorithms, parallel algorithms, and randomized algorithms.

Prerequisite(s): CS 146 (with a grade of "C-" or better); Allowed Majors: Computer Science or Applied and Computational Mathematics; or instructor consent.

Grading: Letter Graded

Computer Science is responsible for scheduling.

SE 156 - Introduction to Artificial Intelligence

3 unit(s)

Basic concepts and techniques of artificial intelligence: problem solving, search, deduction, intelligent agents, knowledge representation. Topics chosen from logic programming, game playing, planning, machine learning, natural language, neural nets, robotics.

Prerequisite(s): CS 146 (with a grade of "C-" or better); Allowed Majors: Computer Science, Data Science, Applied and Computational Mathematics or Software Engineering; or instructor consent.

Grading: Letter Graded

Cross-listed with CS 156. Computer Science is responsible for scheduling.

SE 157B - Database Management Systems II

3 unit(s)

Survey course. Object-oriented data model, definition language, query language. Object relational database systems. Database trends like active, temporal, multimedia, deductive databases. Web database topics, namely, architectures, introduction to interface languages. Team projects.

Prerequisite(s): CS 157A (with a grade of "C-" or better); Computer Science, Applied and Computational Math, Forensic Science: Digital Evidence, or Software Engineering Majors only; or instructor consent.

Grading: Letter Graded

Cross-listed with CS 157B. Computer Science is responsible for scheduling.

SE 158B - Computer Network Management

3 unit(s)

Principles and technologies of network management: reference models, functions (fault, configuration, performance, security and accounting management), management information, communication protocols, integration, and assessment. Network security and cyber defense: cryptography, key distribution, authentication protocols, network attacks, access control, and example systems.

Prerequisite(s): CS 158A or CMPE 148 (with a grade of "C-" or better); Allowed Majors: Computer Science, Software Engineering or Forensic Science: Digital Evidence; or instructor consent.

Grading: Letter Graded

Cross-listed with CS 158B. Computer Science is responsible for scheduling.

SE 163 - Introduction to Computer Graphics and Augmented Reality

3 unit(s)

Introduction to 2D and 3D vector and pixel graphics, 2D and 3D transformations, world to viewer transformation pipeline, perspective projection, hidden line and surface removal, decoration algorithm and texture mapping, integration of pixel graphics and augmented reality, and hands-on laboratories.

Prerequisite(s): CMPE 127; ENGR 100W; MATH 33LA or MATH 39 or EE 112.

Corequisite(s): ENGR 100W

Grading: Letter Graded

Cross-listed with CMPE 163. Computer Engineering is responsible for scheduling.

SE 174 - Server-side Web Programming

3 unit(s)

Development and deployment of multi-tier web-based applications. Introduction to HTML, XML, enterprise design patterns, web services and database access.

Prerequisite(s): CS 46B (with a grade of "C-" or better); Allowed Majors: Computer Science or Software Engineering Majors.

Grading: Letter Graded

Cross-listed with CS 174. Computer Science is responsible for scheduling.

SE 180 - Individual Studies

1-3 unit(s)

Individual work in computer engineering.

Prerequisite(s): Upper division standing and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

Cross-listed with CMPE 180. Computer Engineering is responsible for scheduling.

SE 188 - Machine Learning for Big Data

3 unit(s)

Introduction to machine learning and pattern recognition for big data analytics; machine learning concepts, theories, approaches, algorithms, and big data analytic applications; supervised learning unsupervised learning and learning theory.

Prerequisite(s): CMPE 126 or CS 146

Grading: Letter Graded

Cross-listed with CMPE 188. Computer Engineering is responsible for scheduling.

SE 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

Spanish

SPAN 1A - Elementary Spanish

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Grading: Letter Graded

SPAN 1B - Elementary Spanish

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): SPAN 1A (or equivalent).

Grading: Letter Graded

SPAN 3 - Special Topics in Practical Spanish

4 unit(s)

Spanish 003 is a Special Topics course focused on the practical application of basic Spanish in a number of professional fields such as Health Care, Social Services, Hospitality Management, and Law Enforcement. Repeatable for credit when content changes.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): 9 units of college Spanish (or equivalent).

Grading: Letter Graded

Note(s): Not accepted as preparation for advanced courses. Native speakers see General Information section.

SPAN 4A - Basic Spanish I

4 unit(s)

An Internet-based or on-site course in practical Spanish for use in a variety of professional and everyday activities. For beginners and those who need to improve conversational skills.

Grading: Letter Graded

SPAN 4B - Basic Spanish II

4 unit(s)

An internet-based or on-site course in practical Spanish for use in a variety of professional and everyday activities. A continuation of SPAN 4A for those who need to improve communication skills.

Grading: Letter Graded

SPAN 20A - Spanish for Heritage Speakers I

4 unit(s)

Strengthen and expand the cultural and linguistic resources of heritage learners of Spanish. Study of cultural heritages of Spanish-speaking peoples as well as practice of oral and written skills in Spanish.

Satisfies C2: Humanities.

Prerequisite(s): Knowledge of spoken Spanish and instructor consent.

Grading: Letter Graded

SPAN 20B - Spanish for Heritage Speakers II

4 unit(s)

A heritage speaker of Spanish is someone who grew up speaking and/or listening to Spanish in the home but may have little to no formal exposure to the language. Online course that continues SPAN 20A . Strengthens and expands the cultural and linguistic resources of heritage learners of Spanish through the study of the cultural heritages of Spanish-speaking peoples and the practice of oral and written skills in Spanish.

Satisfies C2: Humanities.

Prerequisite(s): SPAN 20A or knowledge of spoken Spanish and instructor consent.

Grading: Letter Graded

SPAN 25A - Intermediate Spanish

4 unit(s)

Continuation of SPAN 1B. Preparation for advanced courses in the language.

Satisfies C2: Humanities.

Prerequisite(s): One Year of college-level Spanish (or equivalent or SJSU Placement Exam).

Grading: Letter Graded

SPAN 25B - Intermediate Spanish

4 unit(s)

Continuation of SPAN 25A. Preparation for advanced courses in the language.

Satisfies C2: Humanities.

Prerequisite(s): Three semesters of college Spanish (or equivalent).

Grading: Letter Graded

SPAN 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

SPAN 101A - Advanced Spanish

4 unit(s)

Readings, oral discussion, syntax and composition.

Prerequisite(s): Four semester of college Spanish (or equivalent).

Grading: Letter Graded

SPAN 101B - Advanced Spanish

4 unit(s)

Readings, oral discussion, syntax and composition.

Prerequisite(s): Four semesters of college Spanish (or equivalent).

Grading: Letter Graded

SPAN 102A - Spanish Culture

4 unit(s)

History, geography, fine art and daily life of Spain.

Prerequisite(s): Four semesters of college Spanish (or equivalent).

Grading: Letter Graded

SPAN 102B - Hispanic American Culture

3 unit(s)

History, geography, fine art and daily life of Hispanic America.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

SPAN 105 - Spanish Phonology

4 unit(s)

Contrastive analysis of Spanish and English sound systems and application to pronunciation. Language laboratory.

Prerequisite(s): Four semesters of college Spanish (or equivalent).
Grading: Letter Graded

SPAN 110 - Spanish Morphology and Syntax

4 unit(s)

Structural analysis. Comparison of morphological and syntactical patterns of English and Spanish.

Prerequisite(s): SPAN 101B (or equivalent).
Grading: Letter Graded

SPAN 111 - Advanced Spanish Conversation

4 unit(s)

Development of skills for group discussion, dialogue and individual oral presentations on topics pertaining to everyday life, the professions, social problems and the arts. May be repeated once for credit, but only 3 units apply to major.

Prerequisite(s): 4 semesters of college Spanish or advisor consent.
Grading: Letter Graded

Note(s): Native speakers see General Information section.

SPAN 115 - Introduction to Literary Studies in Spanish

4 unit(s)

Introduction to literary studies in Spanish with readings from Spain and Spanish America. Overview of genres and fundamental concepts of criticism.

Prerequisite(s): SPAN 101B or instructor consent.
Grading: Letter Graded

SPAN 120A - Spanish Literature I

4 unit(s)

Notable works from beginning to present.

Prerequisite(s): SPAN 101B, SPAN 102A or SPAN 102B (or equivalent).
Grading: Letter Graded

SPAN 120B - Spanish Literature II

4 unit(s)

Notable works from beginning to present.

Prerequisite(s): SPAN 101B, SPAN 102A or SPAN 102B (or equivalent).
Grading: Letter Graded

SPAN 132 - Special Topics in Spanish for Careers

4 unit(s)

Course will focus on the use of the Spanish language for various professions, and examines in depth selected topics in regard to Spanish in the professional world. Course repeatable when content varies.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Two years of Spanish or instructor consent.

Grading: Letter Graded

SPAN 140A - Spanish American Literature

4 unit(s)

Notable works from beginning to present.

Prerequisite(s): SPAN 101B, SPAN 102A and SPAN 102B (or equivalent).

Grading: Letter Graded

SPAN 140B - Spanish American Literature II

4 unit(s)

Notable works from beginning to present.

Prerequisite(s): SPAN 101B, SPAN 102A and SPAN 102B (or equivalent).

Grading: Letter Graded

SPAN 160A - Hispanic Culture

4 unit(s)

Cultural phenomena, both historical and contemporary, of Spanish-speaking countries.

Repeatable when topic changes for up to 8 units.

Prerequisite(s): SPAN 101B (or equivalent).

Grading: Letter Graded

Cross-listed with SPAN 260A (combined undergraduate/graduate course).

SPAN 160B - Hispanic Linguistics

4 unit(s)

Spanish as spoken in diverse Hispanic cultures.

Repeatable when topic changes for up to 8 units.

Prerequisite(s): SPAN 101B (or equivalent).

Grading: Letter Graded

Cross-listed with SPAN 260B (combined undergraduate/graduate course).

SPAN 160C - Hispanic Literature

4 unit(s)

Outstanding authors or movements of Spain and Latin America.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): SPAN 101B (or equivalent).

Grading: Letter Graded

Cross-listed with SPAN 260C (combined undergraduate/graduate course).

SPAN 170 - Spanish Translation: Theory and Practice

4 unit(s)

Theory and practice of translation for various purposes including literary, scientific, and professional ones. Comparative stylistics of English and Spanish.

Prerequisite(s): SPAN 101B.

Grading: Letter Graded

SPAN 180 - Individual Studies in Spanish

1-3 unit(s)

Individual work by arrangement.

Prerequisite(s): Upper division standing in Spanish (or equivalent with grade of "B") and instructor consent.

Grading: Credit/No Credit

SPAN 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

SPAN 201 - Modern Spanish

4 unit(s)

Analysis of the evolving patterns of syntax and idiomatic construction in the Spanish language of the twentieth and twenty-first centuries. May be repeated for credit when content changes.

Repeatable for credit.

Grading: Letter Graded

SPAN 202 - Seminar in Hispanic Civilization and Culture

4 unit(s)

A comprehensive study of one or more Spanish-speaking countries. A: Andean countries (Colombia, Ecuador, Peru and Bolivia). B: Caribbean (Cuba, Dominican Republic, Puerto Rico and Caribbean coasts of Venezuela, Colombia and the nations of Central America). C: Mexico. D: River Plate Region (Argentina, Chile, Paraguay and Uruguay). E: Spain. May be repeated for credit when course content changes.

Repeatable for credit.

Grading: Letter Graded

SPAN 210 - Old Spanish

4 unit(s)

Analysis of the style and structure of medieval Spanish through selected readings. A fundamental knowledge of Latin is required.

Grading: Letter Graded

Note(s): Alternate years, or on demand.

SPAN 220 - Historical Spanish Linguistics

4 unit(s)

An inquiry into the growth of the Spanish language in Spain and Latin America from the twelfth century to modern times.

Grading: Letter Graded

SPAN 225 - Spanish Dialectology

4 unit(s)

Regional, social, historical, generational dialects that shape Spanish. Research involves readings on dialectology and sociolinguistics, learning to identify characteristics of Spanish dialects and exploring the implications of language contact, linguistic borrowing and code-switching.

Prerequisite(s): Graduate standing or instructor consent.

Grading: Letter Graded

SPAN 250 - Seminar in the Siglo de Oro

4 unit(s)

The works of Cervantes, principal dramatists of the Comedia and other significant authors of the Golden Age. May be repeated for credit when content changes.

Repeatable for credit.

Grading: Letter Graded

SPAN 260 - Seminar in "Modernismo" and the Generation of '98

4 unit(s)

A: Origin and development of the poetry and prose of the Modernista movement in Latin America. B: Examination of the spiritual and intellectual crisis created in Spain by the 1898 Spanish-American War. Representative works of Unamuno, Baroja, Azorin, Valle-Inclan and Antonio Machado. May be repeated for credit when content changes.

Repeatable for credit.

Grading: Letter Graded

SPAN 260A - Hispanic Culture

4 unit(s)

Cultural phenomena, both historical and contemporary, of Spanish-speaking countries.

Repeatable when topic changes for up to 8 units.

Prerequisite(s): SPAN 101B (or equivalent).

Grading: Letter Graded

Cross-listed with SPAN 160A (combined undergraduate/graduate course).

SPAN 260B - Hispanic Linguistics

4 unit(s)

Spanish as spoken in diverse Hispanic cultures.

Repeatable when topic changes for up to 8 units.

Prerequisite(s): SPAN 101B (or equivalent).

Grading: Letter Graded

Cross-listed with SPAN 160B (combined undergraduate/graduate course).

SPAN 260C - Hispanic Literature

4 unit(s)

Outstanding authors or movements of Spain and Latin America.

Repeatable when topic changes for up to 8 units.

Prerequisite(s): SPAN 101B (or equivalent).

Grading: Letter Graded

Cross-listed with SPAN 160C (combined undergraduate/graduate course).

SPAN 270 - Seminar in Contemporary Literature of Spain and Spanish America

4 unit(s)

In-depth study of representative Latin American and Spanish authors of the twentieth and twenty-first

centuries. May be repeated for credit when content changes.

Repeatable for credit.

Grading: Letter Graded

SPAN 280 - Seminar in Romanticism in Spain and Spanish America

4 unit(s)

Philosophical and artistic aspects of the movement, studied through representative Latin American or Spanish works in all literary genres. Focus will alternate each time the course is offered. May be repeated for credit when content changes.

Repeatable for credit.

Grading: Letter Graded

SPAN 298 - Special Study

1-6 unit(s)

Advanced individual research and projects.

Prerequisite(s): Instructor consent.

Grading: Mandatory Credit/No Credit/RP

SPAN 299 - Master's Thesis

3-6 unit(s)

Repeatable for credit.

Prerequisite(s): Advancement to candidacy for the MA degree and advisor consent.

Grading: Credit/No Credit/RP.

Special Education

EDSE 14A - American Sign Language I

3 unit(s)

Introductory course covering basic vocabulary and grammatical structures, appropriate cultural and linguistic behaviors within the deaf community and basic information about the deaf community.

Grading: Letter Graded

EDSE 14B - American Sign Language II

3 unit(s)

Continuation of EDSE 14A. Covers additional basic vocabulary and grammatical structures, cultural and linguistic behaviors within the deaf community and information about the deaf community.

Prerequisite(s): EDSE 14A or instructor consent.

Grading: Letter Graded

EDSE 102 - Intro to Language Development and Disability

3 unit(s)

Introduces the development levels of speech, language, communication, and second language acquisition. Provides an overview of intersectionality, with a specific focus on language, race, and disability.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

EDSE 104 - Early Intervention for Children with Disabilities

3 unit(s)

Introduction to the historical and theoretical roots of early intervention services for young children with or at risk for developing disabilities, including skills and techniques to promote learning while empowering families.

Prerequisite(s): CHAD 60 (or equivalent).

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

EDSE 105 - Supervision Induction Plan Evaluation

3-6 unit(s)

Supervised observation, support and feedback for new special education teachers and evaluation of the induction plan.

Course may be repeated for credit for up to 24 units.

Prerequisite(s): Department consent.

Grading: Credit/No Credit

EDSE 108 - Assessing Young Children

3 unit(s)

Identification, description, and assessment of typical and atypical young children from birth through kindergarten, with an introduction to California learning foundations for children birth-5, and kindergarten state standards. In addition, the course will provide an introduction to ECSE services and collaboration within the local community.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 110 - Students with Autism Spectrum Disorders

3 unit(s)

Introduction to teaching students on the autism spectrum, examination of theoretical foundations of ASD, and applications of evidence-based practices (EBPs) that help provide access to inclusive education.

Prerequisite(s): Special Education Minor

Grading: Letter Graded

EDSE 115 - Introduction to Deaf Culture

3 unit(s)

This course is an introduction to the American Deaf Culture and provides a comprehensive analysis of how Deaf people are understood from a cultural perspective. The identities, contributions and experiences of Deaf people are explored in educational and linguistic context.

Prerequisite(s): EDSE 14A or EDSE 102

Grading: Letter Graded

EDSE 124 - Teach for Social Justice: Language & Disability

3 unit(s)

An overview of second language acquisition and support processes for students with disabilities. Course includes strategies to support emergent bilinguals with disabilities and content delivery in math using a social justice for education lens.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

EDSE 154 - Advanced Fieldwork in ESN and ECSE

6 unit(s)

Supervised teaching of students with extensive support needs or early childhood special education in special and general education settings. Includes campus seminar.

Prerequisite(s): Department consent.

Grading: Credit/No Credit

EDSE 180 - Individual Studies

1-4 unit(s)

Supervised study of a specific problem or topic.

Prerequisite(s): Upper division standing and instructor consent.

Grading: Credit/No Credit

EDSE 192A - Including and Supporting Students

3 unit(s)

Preparation for teaching students with disabilities in general education; provides intervention strategies prior

to referral for special education with policies and procedures regarding placement of and services for students with disabilities, either in special education or within an inclusive classroom.

Prerequisite(s): Department consent

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

EDSE 192B - All Learners: An Introduction to Disabilities

1 unit(s)

Overview of disability incorporating historical, sociocultural, autobiographical and psychological perspectives. Includes the behavioral, developmental and learning characteristics of P-12 students labeled with mild, moderate, and extensive support needs. Introduces information about the 13 disability categories as specified in the Individuals with Disabilities Education Improvement Act (IDEIA) of 2004 and builds on existing law and policy information provided in the previous course (EDSE 192D).

Grading: Letter Graded

EDSE 192C - Inclusive Strategies for Educating Students with Disabilities

1 unit(s)

Designed to familiarize students with evidenced-based and high-leverage practices for meeting the academic, behavioral, and social emotional needs of students with disabilities in inclusive settings.

Grading: Letter Graded

EDSE 192D - Introduction to Special Education Policy and Law

1 unit(s)

Introduces special education policy and laws, situating these policies in the historical context in which they developed while highlighting the rights of all students as outlined in federal policy.

Course may be repeated for up to 2 units.

Grading: Letter Graded

EDSE 213A - Methods for Students with Extensive Support Needs

3 unit(s)

Examination and application of evidence-based instructional strategies that provide access to curriculum aligned with content standards for students with extensive support needs as well as functional skills instruction to successfully transition students with extensive support needs into higher educational, vocational, and community settings.

Prerequisite(s): EDSE 206A and department consent.

Grading: Letter Graded

EDSE 215 - Assessing Students with Disabilities

3 unit(s)

Formal and non-formal evaluation methods to assess students with mild/moderate disabilities and extensive support needs, which include standardized and alternative assessment, RTI, IEP development, case studies, and a comprehensive understanding of evidenced-based practices in assessment.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 216A - Literacy Instruction: Students with Disabilities

3 unit(s)

Examination and application of evidence-based instructional practices for teaching reading and writing to students with disabilities.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 217A - Advanced Fieldwork in Mild Moderate Support Needs

6 unit(s)

Supervised teaching of students with mild moderate support needs in special and general education settings. Includes campus seminar.

Prerequisite(s): Department consent.

Grading: Credit/No Credit

EDSE 217B - Directed Teaching II

6 unit(s)

Supervised teaching experience in educational settings for students with mild to moderate disabilities. Concurrent seminar.

Prerequisite(s): Completion of prescribed credential program including EDSE 217A and departmental consent.

Grading: Credit/No Credit

EDSE 218A - ASD: Moderate to Severe Disabilities

3 unit(s)

Theoretical foundations and application of evidence-based best practices for students with ASD and M/S disabilities including social language interventions, social stories, integrated playgroups, positive behavior support, self-advocacy skills inclusive education, recreation and leisure, and special interventions for young children.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 218B - ASD: Mild to Moderate Disabilities

3 unit(s)

Theoretical foundations and application of evidence-based best practices for students with ASD and M/M

disabilities including social language interventions, social stories, integrated playgroups, positive behavior support, self-advocacy skills, inclusive education, recreation and leisure, and special interventions for young children.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 218C - ASD: Collaboration and Implementation of Best Practices

3 unit(s)

Focus on collaboration and understanding roles of service providers for students with autism spectrum disorders. Team work and strategies for working with educational professionals and parents or significant others in the life of the students with autism spectrum disorders.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 218D - Teaching Students with Autism Spectrum Disorders

3 unit(s)

Theoretical foundations and application of evidence-based best practices for students with ASD including social language interventions, social stories, integrated playgroups, positive behavior support, self-advocacy skills, recreation and leisure skills, collaboration with parents and siblings, and special interventions for young children. The course emphasizes inclusive education for students with ASD.

Prerequisite(s): Department or Instructor Consent.

Grading: Letter Graded

EDSE 220 - Advanced Research Projects in Special Education

3 unit(s)

Advanced application of special education action research projects conducted in diverse educational settings.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 221 - Methods for Young Children with Disabilities

3 unit(s)

Examines the ways in which assessment and evaluation inform the development of curriculum and instruction for young children with disabilities. Focuses on the use of embedded instruction within ongoing routines and activities to address motor, adaptive, cognitive, communication, and social skills development while attending to multicultural/linguistic considerations.

Prerequisite(s): Department consent.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

EDSE 224 - Methods for Emergent Bilinguals with Disabilities

1-3 *unit(s)*

Examines the unique considerations of working with emergent bilinguals with and without disabilities in schools. Teaching applications and a conceptual understanding of the intersections of race, culture, disability, and language will be included and applied to the development of curriculum and delivery of instruction and assessment.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 228A - Topics in Collaboration and Transition

3 *unit(s)*

Strategies for effective communication and collaboration practices with members of the various teams that plan and serve students receiving special education services. Emphasis in planning transitional life experiences across the lifespan.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 230A - Inclusive Pedagogy for Students with M/MSN

3 *unit(s)*

Examination and application of evidence-based and high leverage practices for delivering instruction to students with mild/moderate support needs.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 231 - Issues and Research in Special Education

3 *unit(s)*

Evaluation of research on characteristics and methods of identification of individuals with disabilities; including minority and underachieving students. Current funding issues, research models, research on individuals with disabilities and instructional organization are reviewed and analyzed.

Prerequisite(s): Department consent.

Grading: Letter Graded

Sustainability Focused - SDG 4: Quality Education

EDSE 231X - Educational Research: Design and Implementation

3 *unit(s)*

EDSE 231X is a continuation of the process for the development of educational research, implementation of the study, and writing for the Masters of Arts project or thesis started in EDSE 231.

Prerequisite(s): EDSE 231 and EDSE 285.

Grading: Letter Graded

EDSE 234 - Early Field Experiences in Special Education

1-3 unit(s)

Beginning fieldwork course, including supervised teaching of students with mild/moderate support needs in special and general education settings. Includes campus seminar.

Prerequisite(s): Department consent, passing of CBEST and CSET exams, Certificate of Clearance.

Grading: Credit/No Credit/RP.

EDSE 235A - Movement, Mobility, Sensory and Health

3 unit(s)

Identifies the special services available to students with moderate/severe disabilities and defines the implementation of these services in the school and community. The course will define the role, function and services provided by professionals available to meet the health care and educational needs of students with multiple disabilities. The course will also address appropriate assessment and referral practices for teachers, seizures protocols, basic first aid and universal precautions, medication administration, positioning and handling for students with severe disabilities and feeding techniques.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 241 - Applying Assistive & Instructional Technology

3 unit(s)

Examination and application of evidence-based applications of AT/IT for students with disabilities. This includes the consideration of AT, including AAC, and evaluation for technology to be included in the IEP.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 269 - Supportive Learning Environments for Young Children

3 unit(s)

Critical study of theory, research, and practice related to establishing nurturing and responsive relationships and supportive learning environments in cross-cultural, inclusive, multilingual settings for children and students from preschool through third grade.

Grading: Letter graded.

EDSE 279 - Positive Behavior Support

3 unit(s)

Examination and application of various approaches and strategies for promoting positive social, emotional, and academic learning experiences for students with and without disabilities. Effective class-wide and individual strategies for students, including the assessment of behaviors, design of formal and informal positive behavior support plans, and the implementation and evaluation of such plans.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 285 - Intro to Action Research in Special Education

3 unit(s)

Review of existing scholarship in special education and appropriate design of an action research project.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): Department consent.

Grading: Letter Graded

EDSE 298 - Special Studies

1-3 unit(s)

Supervised study in a specific field of special education; to be taken only with the consent of the division head.

Prerequisite(s): Department consent.

Grading: Mandatory Credit/No Credit/RP

EDSE 299 - Master's Thesis

3 unit(s)

Supervised thesis in the field of special education, to be taken only with chair consent.

Prerequisite(s): Department consent.

Grading: Mandatory Credit/No Credit/RP

Speech Education

SPED 184Y - Student Teaching II - Classroom Teaching

4-6 unit(s)

Minimum 80-120 class periods of classroom, laboratory, or field teaching in appropriate single subjects, grades K-12 and related teaching activities/seminar.

Prerequisite(s): Joint approval of major and Education departments.

Grading: Credit/No Credit

SPED 184Z - Student Teaching III - Classroom Teaching

4-6 unit(s)

See SPED 184Y for course description.

Grading: Credit/No Credit

Note(s): May be in different subject/school and will be at a different grade level.

SPED 242C - Educational Internship in Teaching

4-6 unit(s)

Designed to provide opportunity for supervised teaching on either the elementary or secondary school level on the basis of a special provisional credential.

Prerequisite(s): Matriculation as a Graduate student
Grading: Credit/No Credit

Speech Pathology

EDSP 102 - Communication Development in Children

3 unit(s)

Knowledge about the language learning process and theories as well as the factors that interfere with its normal development. Introduction to linguistic terminology, components in language, stages of language development, bilingualism and language diversity.

Prerequisite(s): Communicative Disorders and Sciences major or instructor consent.
Grading: Letter Graded

EDSP 110 - Survey of Communication Disorders

3 unit(s)

Introduction to person-centered and multicultural perspectives within educational, socialization, and vocational contexts for speech, language, hearing and swallowing disorders across the lifespan.

Prerequisite(s): Communicative Disorders and Sciences major and upper division standing, or instructor consent.
Grading: Letter Graded

EDSP 111 - Introduction to Clinical Phonetics

3 unit(s)

Introduction to speech sound production, rules of the International Phonetic Alphabet, transcription and application.

Prerequisite(s): Communicative Disorders and Sciences major and upper division standing, or instructor consent.
Grading: Letter Graded

EDSP 112 - Fundamentals of Clinical Practice

3 unit(s)

Fundamental principles of clinical practice in speech-language pathology and audiology across the lifespan including ethics, evidence-based practice, and cultural humility.

Prerequisite(s): EDSP 102, EDSP 111, and EDSP 113; or instructor consent.
Grading: Letter Graded

EDSP 113 - Anatomy and Physiology of Communication Disorders

3 unit(s)

Analysis and measurement of the components and processes involved in the production and reception of speech.

Prerequisite(s): Communicative Disorders and Sciences major and upper division standing, or instructor consent.

Grading: Letter Graded

EDSP 120 - Communicative Disorders in Children

3 unit(s)

Overview of communication disorders and relevant treatment strategies for children.

Prerequisite(s): EDSP 102, EDSP 111, and EDSP 113; or instructor consent.

Grading: Letter Graded

EDSP 161 - Neuroanatomy and Neurophysiology of Communication Disorders

3 unit(s)

Neurological substrates and mechanisms underlying typical speech, language, and swallowing function.

Prerequisite(s): Upper division standing and EDSP 113; or instructor consent.

Grading: Letter Graded

EDSP 162 - Communicative Disorders in Adults

3 unit(s)

Overview of communication disorders and relevant management strategies for adults.

Prerequisite(s): EDSP 102, EDSP 111, and EDSP 113; or instructor consent.

Grading: Letter Graded

EDSP 176 - Guided Professional Clinical Observations

3 unit(s)

Guided observation experiences in audiology and speech-language pathology; introduction to: clinical reasoning and clinical mindset; professional conduct; clinician-client interactions and perspectives; efficacy and evidence-based practice; interprofessional collaboration; effective oral, listening, nonverbal, and written clinical communication skills.

Prerequisite(s): EDSP 102 and EDSP 111.

Grading: Letter Graded

EDSP 177 - Practicum in Speech Pathology

1-3 unit(s)

Supervised clinical experience with children and adults who have speech and language disorders.

Course may be repeated for credit up to two times.

Prerequisite(s): EDSP 112, EDSP 120 or instructor consent.

Grading: Credit/No Credit

EDSP 180 - Independent Study in Communicative Disorders and Sciences

1-3 unit(s)

Supervised study in specific topics of communicative disorders and sciences.

Prerequisite(s): Upper division standing and instructor consent.

Grading: Credit/No Credit

EDSP 221 - Research Seminar in Communicative Disorders

3 unit(s)

An overview of the theory, procedures, application and use of research in communicative disorders and sciences; assist in the study of a specific area of applied research from the current professional literature; and assist in the development of a specific research proposal.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

EDSP 222 - School Age Language, Literacy, and Social Communication

3 unit(s)

Explores and discusses connections between listening, speaking, reading and writing with applications in assessing and planning intervention programs for monolingual and bilingual individuals who have developmental or acquired language-learning disabilities. Required for speech-language pathologists.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): EDSP 251, EDSP 259, EDSP 262, EDSP 276 or instructor consent.

Grading: Letter Graded

EDSP 250 - Seminar in Voice Disorders

3 unit(s)

Advanced discussion of human voice production, the perceptual, acoustic, and physiologic characteristics of voice disorders, and clinical implications, with hands-on learning of assessment methods and treatment of functional, organic, and neurological voice disorders across the lifespan.

Grading: Letter Graded

EDSP 251 - Seminar in Phonological Disorders

3 unit(s)

Establishes a level of advanced competency in the knowledge and understanding of phonology and phonological disorders: the procedures of analysis, the assessment of phonological disorders and the establishment of intervention strategies as a logical consequence of diagnostic findings.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EDSP 252 - Seminar Fluency Disorders

3 unit(s)

Examines the complex issues related to the clinical management of fluency disorders. Includes contemporary research on etiology, assessment methods and concerns, intervention approaches, interdisciplinary considerations, and technological advancements.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EDSP 254 - Seminar in Neurological Disorders

3 unit(s)

Provides an understanding of the neuropsychological, cognitive and linguistic correlates underlying adult neurological disorders. Assessment and treatment for a variety of disorders emphasized.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EDSP 255 - Seminar in Motor Speech Disorders

3 unit(s)

Provides an understanding of anatomy, physiology and neurology of motor speech disorders. Emphasis on assessment and treatment of apraxia and dysarthrias.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EDSP 259 - Seminar in Language Disorders in Children

3 unit(s)

Provides an understanding of the neuropsychological, cognitive and linguistic correlates of developmental language disorders which underlie the competencies to diagnose and provide treatment for children with language impairments.

Prerequisite(s): Graduate standing or instructor consent.
Grading: Letter Graded

EDSP 260 - Seminar in Dysphagia

3 unit(s)

A review of the anatomic, neurologic, physiologic, and behavioral correlates of normal and disordered swallowing across the life-span. Assessment and treatment of swallowing disorders will be emphasized in children and adults with genetic and acquired disorders.

Prerequisite(s): EDSP 254, EDSP 255, EDSP 265 or Instructor Consent.
Grading: Letter Graded

EDSP 262 - Speech and Language in a Cross-Cultural Society

3 unit(s)

Communication development and disorders in bilingual clients. Emphasis on the assessment of such disorders to the bilingual population.

Grading: Letter Graded

EDSP 264 - Contemporary Professional Issues

3 unit(s)

Organization and development of profit and nonprofit agencies that serve the communicatively impaired. Role and responsibilities of supervisors included.

Grading: Letter Graded

EDSP 265 - Seminar in Cognitive Disorders

3 unit(s)

Provides a framework for better understanding the process of cross-generational communication and the improvement of communication competencies for interaction with cognitively impaired persons.

Grading: Letter Graded

Cross-listed with GERO 265. Communicative Disorders and Sciences is responsible for scheduling.

EDSP 269 - Field Experience in Public Schools - Speech Pathology and Audiology

6 unit(s)

Supervised teaching in speech pathology and audiology. Two hundred clock hours minimum requirement for credential as speech, language and hearing specialist.

Prerequisite(s): TB clearance, CPR, basic physical, Hep B

Grading: Letter Graded

EDSP 276 - Practicum in Advanced Assessment

3 unit(s)

Supervised clinical experience in assessment of a variety of speech/language disorders. Laboratory and classroom experience required.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

EDSP 277 - Advanced Practicum-Speech Pathology

1-3 unit(s)

Working with children, adult, and group clients within a clinical practicum setting including preparing lesson plans, analyzing assessment results, developing and implementing therapy activities, collecting data,

conducting client conferences and writing reports and home programs.

Course may be repeated for credit for up to 12 units.

Prerequisite(s): Graduate standing and instructor consent.

Grading: Letter Graded

EDSP 278 - Clinical Management and Practicum

6-10 unit(s)

Supervised clinical experience.

Prerequisite(s): EDSP 254, EDSP 255, EDSP 276, EDSP 277 and instructor consent.

Grading: Credit/No Credit

EDSP 288 - Seminar in AAC and Communication Disorders

3 unit(s)

Exploration of how augmentative and alternative communication is used for individuals with complex communication needs. The impact of cognition, educational, physical, psychosocial and linguistic aspects of behavior on AAC use, assessment, intervention and research will be explored.

Prerequisite(s): EDSP 255, graduate standing or instructor consent.

Grading: Letter Graded

EDSP 298 - Special Studies

1-3 unit(s)

Supervised study in a specific field of speech-language pathology.

Prerequisite(s): Instructor consent.

Grading: Mandatory Credit/No Credit/RP

EDSP 299 - Master's Thesis

1-4 unit(s)

Supervised thesis work in speech-language pathology.

Prerequisite(s): Instructor consent.

Grading: Mandatory Credit/No Credit/RP

Statistics

STAT 95 - Elementary Statistics

3 unit(s)

Hypothesis testing and predictive techniques to facilitate decision-making; organization and classification of data, descriptive and inferential statistics, central tendency, variability, probability and sampling distributions, graphic representation, correlation and regression, chi-square, t-tests, and analysis of variance. Computer use in analysis and interpretation.

Satisfies B4: Mathematics/Quantitative Reasoning.

Prerequisite(s): Math Enrollment Category M-I or M-II, or for Categories III or IV, completion of a GE Area B4 course with a grade of C- or better.

Grading: Letter Graded

Note(s): Intended for Psychology majors and minors as well as for programs in Behavioral Science, Child Development, Education, Health Science, Nursing, Nutritional Science, Social Science, and Social Work.

STAT 115 - Intermediate Statistics

3 unit(s)

Statistical analysis at the intermediate level; chi-square, analysis of variance, correlation and regression, and topics in experimental design; use of microcomputers for statistical calculations.

Prerequisite(s): STAT 95 (or equivalent).

Grading: Letter Graded

Note(s): Intended for majors in education, nursing, personnel administration, psychology, social service and sociology, and psychology minors.

STAT 235 - Multivariate Analysis

3 unit(s)

Multivariate techniques for analyzing social science data with emphasis on multiple regression, multivariate analysis of variance, factor analysis, discriminant analysis and canonical correlation.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

STAT 245 - Advanced Statistics

3 unit(s)

Advanced problems in statistical analysis. Advanced consideration of hypothesis testing, estimation and analysis of variance.

Prerequisite(s): STAT 115 or instructor consent.

Grading: Letter Graded

Tagalog

TAG 1A - Elementary Tagalog I

4 unit(s)

Develops four Tagalog language skills (listening, speaking, reading, and writing) in three modes of communication (interpersonal, interpretive, and presentational). Course provides the basic skills and knowledge to engage with Filipino social and cultural communities.

Satisfies C2: Humanities.

Grading: Letter Graded

TAG 1B - Elementary Tagalog II

4 unit(s)

Basic skills and knowledge to engage with Filipino social and cultural communities. Covers the contents of Elementary Tagalog textbook, lessons 7-12. Development of four Tagalog language skills (listening, speaking, reading, and writing) in three modes of communication (interpersonal, interpretive, and presentational).

Satisfies C2: Humanities.

Prerequisite(s): TAG 1A.

Grading: Letter Graded

TAG 25A - Intermediate Tagalog I

4 unit(s)

Develops four Tagalog language skills (listening, speaking, reading, and writing) in three modes of communication (interpersonal, interpretive, and presentational) resulting in intermediate level of language knowledge and skills to engage with Filipino social and cultural communities. Covers lessons 1-10 of Intermediate Tagalog textbook.

Prerequisite(s): TAG 1B or equivalent.

Grading: Letter Graded

TAG 25B - Intermediate Tagalog II

4 unit(s)

Develops four Tagalog language skills (listening, speaking, reading, and writing) in three modes of communication (interpersonal, interpretive, and presentational) resulting in intermediate level of language knowledge and skills to engage with Filipino social and cultural communities. Covers lessons 11-20 of Intermediate Tagalog textbook.

Prerequisite(s): TAG 25A.

Grading: Letter Graded

Teacher Education

EDTE 166 - Pre-Professional Experience

1-3 unit(s)

Observation of learners; service as teacher assistants in public school classrooms; tutoring. May be repeated once.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing.

Grading: Credit/No Credit

EDTE 180 - Individual Studies

1-3 unit(s)

Supervised study in specific fields of elementary or secondary education not covered by offered courses.

Prerequisite(s): Division head consent.

Grading: Credit/No Credit

EDTE 192 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Letter Graded

EDTE 193 - Introduction to Emancipatory Approaches to Computing

1 unit(s)

To center equity and justice in computer science education, teachers explore the social, cultural, ethical, and legal impacts of computing from the perspectives of individuals, schools, teachers, students, and the global community. They gain an understanding of the landscape of equity and justice issues related to computer science education; develop critical thinking skills about computing and related technologies; and begin to reimagine computer science education and the design of curricular resources to help students create a more just future.

Course may be repeated for credit for a maximum of 6 units

Grading: Letter Graded

EDTE 194 - Computer Practice and Programming

3 unit(s)

In-depth introduction to programming through a survey of three programming languages: Scratch, MakeCode, and Python. Teachers develop a broad range of expertise, see how block and text-based languages work together, and learn how computer science can be used as a tool to deepen engagement with classroom content. Final project addresses how to use computer science concepts to address problems that are relevant to teachers' schools and communities.

Course can be repeated for credit.

Prerequisite(s): EDTE 193

Grading: Letter Graded

EDTE 195 - Connecting Communities Through Computational Thinking and Computing Systems

3 unit(s)

Builds on introductory programming knowledge to solve problems and design systems. Students will learn computational thinking strategies using fundamental computing concepts; understand the role of computer and communication devices in designing and creating innovative solutions; complete activities that investigate computing systems, networks, and the internet; use Scratch, MakeCode, and Python to deepen instructional and pedagogical practices.

Grading: Letter Graded

EDTE 197 - Computer Science Education: Pedagogical Practices for Community Impact

3 unit(s)

Presentation of existing curricular materials. How to modify and create instructional materials to support the integration of computer science content into one's home subject and to engage students in computer science content as an independent subject. Culturally responsive teaching and universal design are highlighted. Design and implementation of a half day set of activities to members of the community followed by reflection.

Repeatable for a total of 6 units.

Grading: Letter Graded.

EDTE 201 - Critical Issues in Education

3 unit(s)

A cross-disciplinary investigation of fundamental value issues of American education in a democratic society, considered in the context of the problems and prospects of world civilizations.

Grading: Letter Graded

EDTE 208 - Educational Sociology

3 unit(s)

Role of education in modern social, economic and political life. The school as institution. Problems in American life which affect and are affected by public schools.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Focused - SDG 4: Quality Education

EDTE 208A - Culture, Education and Power for Spanish-English Bilinguals

3 unit(s)

Course addresses current cultural, educational, and equity issues for Spanish-English bilinguals in the USA. It partially satisfies (in conjunction with EDTE 262A and EDTE 297A) the requirements to obtain a bilingual authorization in Spanish by the California Commission on Teacher Credentialing. Spanish fluency

proficiency is needed, as the course will be taught in Spanish (with supports for speakers who have English as a first language).

Grading: Letter graded.

EDTE 208B - Bilingual Educational Sociology

3 unit(s)

Role of education and bilingual education in modern social, economic and political life. The school as institution. Problems in American life which affect and are affected by public schools. Multilingualism in education and its cultural implications, with an emphasis on Spanish-speaking communities.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

EDTE 208M - Culture, Education and Power for Mandarin-English Bilinguals

3 unit(s)

Course addresses current cultural, educational, and equity issues for Mandarin-English bilinguals in the USA. It partially satisfies (in conjunction with EDTE 262M) the requirements to obtain a bilingual authorization in Mandarin by the California Commission on Teacher Credentialing. Mandarin fluency proficiency is needed, as the course will be taught in Mandarin (with supports for speakers who have English as a first language).

Grading: Letter graded.

EDTE 210 - Becoming a Reader at Any Age

3 unit(s)

Theory and practice of teaching beginning and struggling readers and writers, both native and nonnative English speakers.

Prerequisite(s): EDEL 108A or EDSC 138A.

Grading: Letter Graded

EDTE 211 - Developing Academic Language for Reading Across the Curriculum

3 unit(s)

Focus on comprehension across subject areas for first and second language learners: background knowledge, fluency, vocabulary, and metacognition.

Prerequisite(s): EDEL 108A or EDSC 138A.

Grading: Letter Graded

EDTE 212 - Critical Literacy Leadership Practicum

3 unit(s)

This practicum offers candidates the opportunity to develop their literacy leadership stance. Candidates will work collaboratively with colleagues in schools to design and lead Communities of Practice specific to literacy curriculum, instructional methodologies, and culturally and linguistically sustaining practices. Additionally, candidates will design and lead a more formal professional development session specific to school site needs. They will explore and meet with community resources and families to develop understanding of the ways their literacy leadership might expand.

Grading: Letter Graded

EDTE 214 - Learning in a High Tech Environment

3 unit(s)

Teaching and learning with high technology from student-centered perspectives. Lab activities, field observations and investigations in individual areas of specialization. Includes theory to practice, exploring new uses of technology, logistics, leadership roles. May not be repeated in the same semester.

Prerequisite(s): EDIT 122 (or equivalent).

Grading: Letter Graded

EDTE 215 - Culturally and Linguistically Sustaining Literacy Instruction

4 unit(s)

Richly diverse classrooms are filled with students who bring with them a wide range of languages, literacies, and cultural practices. Developing an effective culture of literacy requires an asset-based stance that celebrates each student's unique background, strengths, language ecologies, and ways of engaging as learners. Teachers must learn to reflect on their own background and biases including beliefs about language learning, develop culturally sustaining methods of instruction, incorporate resources that are real and relevant for all students, and learn to honor varied patterns of participation and ways of knowing and communicating.

Ensuring that all students become purposefully literate further requires that teachers broaden their vision for literacy learning, moving beyond increasing students ability in reading, writing, speaking, and listening, towards supporting students' ability to use their literate abilities to observe their world closely, ask critical questions, and add their voices to conversations of consequence.

Grading: Letter Graded

EDTE 216 - Culturally Responsive Assessment for Instruction

4 unit(s)

This course provides research-based, developmental, culturally responsive assessments in literacy for emergent, beginning, second language, and older readers and writers. Assessment and teaching strategies are presented that will enable students to understand the process of reading/writing acquisition and its application. Students will critically analyze assessment data for purposes of instruction and professional development. There is a focus on linguistically and culturally diverse students.

Grading: Letter Graded

EDTE 217A - Practicum Culturally Responsive Assess to Instruct

2 unit(s)

This course provides research-based, developmental, culturally responsive assessments in literacy for emergent, beginning, second language, and older readers and writers. Since it is a practicum, candidates will be expected to work with students and colleagues in schools. Assessment and teaching strategies are presented that will enable students to understand the process of reading/writing acquisition and its application. Students will critically analyze assessment data for purposes of instruction and professional development. There is a focus on linguistically and culturally diverse students.

Grading: Letter Graded/RP

EDTE 217B - Practicum: Culturally Sustaining Literacy Instruct

2 unit(s)

For Reading/Language Arts Specialist Credential or Reading Certificate candidates. In a supervised program, candidates work with struggling readers and implement effective ongoing assessment and instructional strategies to meet the need of diverse struggling readers.

Misc/Lab: 2.5 hour Seminar/1.0 hour activity

Prerequisite(s): EDTE 210, EDTE 211, EDTE 216, EDTE 292

Grading: Credit/No Credit

EDTE 220 - Advanced Critical Literacy Instruction

3 unit(s)

Candidates learn advanced theory and critical methods to collaboratively analyze instructional practices and evaluate student assessment data at grade, school or district levels to plan and provide coaching to educators to strengthen culturally and linguistically sustaining literacy practices.

Grading: Letter Graded

EDTE 223 - Politics, Theory and Practice of Critical Literacy

3 unit(s)

This course will examine the politics of literacy instruction on the local, state and national levels. Students will ground their analysis of policy in examinations of theories of literacy and literacy development. Students will engage in an extended examination of the Science of Learning movement as a case study of how advocates of curricula frame literacy research and theory to engage in public debate.

Grading: Letter Graded

EDTE 224 - Seminar in Educational Psychology

3 unit(s)

Role of psychology in education. Contributions of educational research to current classroom practice and curriculum design. Applications of educational psychology research to current problems in education. Theoretical and practical approaches to understanding learning and teaching.

Grading: Letter Graded

EDTE 242R - Critical Literacy Student Practicum

3 unit(s)

This practicum builds on the learning of prior courses to offer candidates clinical experience as they develop the art and science of literacy teaching through thoughtful assessment, learning design, and feedback for diverse student populations. The focus is on implementation and integration of prior learning. Candidates will work collaboratively with colleagues to understand research-based instructional practices and develop the skill to draw from these practices artfully and responsively. Students will assess, design instruction for, and teach diverse students at varied developmental levels, with an emphasis on: How students learn to read, how students become proficient readers, the relationship between language, reading, and writing, and culturally and linguistically responsive assessment and instructional tools and strategies teachers can use to assist all students, particularly Emergent Bilinguals and historically underserved students. Candidates will learn the power of professional collaboration among peers to better understand their students and their craft, developing a lifelong professional learning mindset.

Grading: Letter Graded

EDTE 245 - Assessment and Instruction for Culturally Sustaining Literacy Leadership

3 unit(s)

Literacy teaching and learning is driven by an inter-related ecosystem of state and local assessments, frameworks and benchmarks, and literacy programs. Mandates are created at the state level, which then frame decisions made at the local level, without full consideration of the cultural and linguistic diversity served by various districts throughout the state. To best serve diverse student populations, literacy educators need to develop the knowledge and experience required to analyze each component of the ecosystem, take a leadership stance, and advocate for variations in assessment, instructional methodologies, and materials that best serve their unique students and community.

Grading: Letter Graded

EDTE 250 - Qualitative Research in Education

3 unit(s)

The role of qualitative research in education and society. Historical theoretical groundings, ethical considerations, procedures in development and evaluation of research proposals, techniques of research data analysis.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Prerequisite(s): EDEL 221 or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

EDTE 250B - Qualitative Research in Bilingual Education

3 unit(s)

The role of qualitative research in education and society. Historical theoretical groundings, ethical considerations, procedures in development and evaluation of research proposals, techniques of research data analysis pertaining with an emphasis on research issues and methods in bilingual education settings.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GVAR in this master's program.

EDTE 260 - Critical Perspectives on Schooling for a Pluralist Democracy

3 unit(s)

Critical study of theory, practice and research related to effective communication in cross-cultural, multilingual settings.

Grading: Letter Graded

EDTE 262 - Classroom Issues in the Language/Literacy Development of L2 Learners

3 unit(s)

Theories of first and second language acquisition and their application to teaching reading, writing and SDAIE in linguistically diverse classrooms.

Prerequisite(s): EDEL 108A or instructor consent.

Grading: Letter Graded

EDTE 262A - Language Methods and Equity for Spanish-English Bilinguals

3 unit(s)

Course develops critical language awareness and skills to teach language and literacy to Spanish-English bilinguals in the USA. It partially satisfies (in conjunction with EDTE 208A and EDTE 297A) the requirements to obtain a bilingual authorization in Spanish by the California Commission on Teacher Credentialing. Spanish fluency proficiency is needed, as the course will be taught in Spanish (with supports for speakers who have English as a first language).

Grading: Letter graded.

EDTE 262B - Classroom Issues in the Language/Literacy Development of Emergent Bilinguals

3 unit(s)

Theories of bilingualism, language acquisition and their application to teaching reading, writing and in linguistically diverse classrooms. The context of bilingualism in the US and the world and the policies that influence bilingual education.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

EDTE 262M - Language Methods and Equity for Mandarin-English Bilinguals

3 unit(s)

Develops critical language awareness and skills to teach language and literacy to Mandarin-English bilinguals in the USA. Examines theories in language development, second language acquisition theories,

language assessment, underground of bilingual education, bilingual education models, policies in bilingual education, and instructional strategies and practices in working with emergent bilingual students at school settings. Partially satisfies (in conjunction with EDTE 208M) the requirements to obtain a bilingual authorization in Mandarin by the California Commission on Teacher Credentialing. Taught in Mandarin (with supports for speakers who have English as a first language).

Prerequisite(s): Mandarin fluency proficiency.

Grading: Letter graded.

EDTE 282 - Assessment and Evaluation

3 unit(s)

Principles of educational assessment and evaluation. Instructional and classroom assessment design. Focus on construction, selection and use of embedded instruments. Interpretation of data for teachers and students' use.

Prerequisite(s): Program director consent.

Grading: Letter Graded

EDTE 290C - Critical Literacy Research Methods

3 unit(s)

Emphasis on research/teacher inquiry with attention to research designs and methods from various disciplinary perspectives for the study of literacy. This course addresses qualitative educational research methods with a focus on critical research, assessments as measures, critical analysis of research, and using research to develop critical, responsive literacy improvement plans.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

EDTE 292 - Writing Across Cultures and the Curriculum

3 unit(s)

Research, theory and practice of writing development of instruction for native and nonnative English speakers. Emphasis on writing in an integrated curriculum.

Prerequisite(s): EDEL 108A or instructor consent.

Grading: Letter Graded

EDTE 294 - Research/Practices in Health and Special Education

3 unit(s)

Introduces students to issues in health and special education that are necessary for them to know and be able to meet their legal and professional responsibilities. The course includes identifying, referring, and supporting students who may be at risk of health problems and have special needs. Students will also learn about effective instruction in health and special education content and skill development and how to create and support a safe and healthy environment for learning for all students.

Prerequisite(s): Upper division or Graduate standing.

Grading: Letter Graded

EDTE 297A - Advanced Issues in Spanish-English Bilingual Education

1 unit(s)

Explores the most current conceptual and equity issues in Spanish-English bilingual education, with an emphasis on developing bilingual teacher agency. Partially satisfies (in conjunction with EDTE 208A and EDTE 262A) the requirements to obtain a bilingual authorization in Spanish by the California Commission on Teacher Credentialing. Taught in Spanish (with supports for speakers who have English as a first language).

Prerequisite(s): Spanish fluency proficiency.

Grading: Letter graded.

EDTE 297B - Advanced Issues in Bilingual Education

1-3 unit(s)

The role of bilingual teacher identity development and networking on the development of teacher agency in their linguistically-diverse communities. Critical sociolinguistics applied to multilingual development in the California and US contexts. Multilingual policy and organization analysis related to bilingual teacher personal and professional development.

Course may be repeated for credit up to 4 units.

Grading: Credit/No Credit.

EDTE 297C - CalTPA Support

1 unit(s)

Provides appropriate support to Multiple Subject Credential or Single Subject Credential teacher candidates as they complete their Cycle 1 and Cycle 2 CalTPA. Explores content, strategies, and resources to enhance CalTPA submissions. Reviews CalTPA examples, rubrics, and assessor feedback to understand CalTPA evidence and response requirements.

Course may be repeated for up to 2 units for credit.

Grading: Credit/No Credit.

EDTE 297F - Field Support

1 unit(s)

Exploration of classroom practices to support student teaching.

Repeatable for credit up to 2 units.

Grading: Credit/No Credit.

EDTE 298 - Special Studies in Education

1-6 unit(s)

Supervised study in a specific educational field.

Prerequisite(s): Consent of program director.
Grading: Mandatory Credit/No Credit/RP

EDTE 299 - Master's Thesis

1-6 unit(s)
Supervised thesis in the field of education.

Prerequisite(s): Advancement to candidacy for the master's degree.
Grading: Mandatory Credit/No Credit/RP

EDTE 1290R - Culminating Experience Supervision

1 unit(s)
Continued work on thesis or project beyond minimum required units, for cases in which final deliverables are still in progress.

Prerequisite(s): RP grade in a preceding thesis or project semester.
Grading: Mandatory Credit/No Credit/RP

Note(s): No Degree Credit.

Teacher Education is responsible for scheduling.

Technology

TECH 15 - Careers in Engineering Technology

3 unit(s)
Introduce students to career opportunities in Engineering Technology. Resume writing, internship seeking, sources of financial aid, Study Abroad, time management, project management, leadership skills, emerging technologies, product design and patents, guest speakers and related industry tours.

Grading: Letter Graded

TECH 20A - Computer-Aided-Graphics

2 unit(s)
Introduction to Computer-Aided-Graphical communication tools. Orthographic projections, section and auxiliary views and dimensioning standards. Development of visualization and technical sketching skills in conjunction with orthographic and pictorial projections. Dimensioning and tolerancing utilizing 2D and 3D commercially available software.

Misc/Lab: 1 hour lecture and 3 hours lab

Grading: Letter Graded

TECH 25 - Introduction to Materials Science and Technology

3 unit(s)

Introduction to materials science including atomic and crystal structures; imperfections and atom movement; phase equilibria and transformations; boundaries; heat treatment of metals; mechanical, physical and chemical properties of materials. Laboratory exercises on processing, microstructure, and properties of engineering materials.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): MATH 18A or equivalent.

Corequisite(s): CHEM 1A or CHEM 30A or equivalent.

Grading: Letter Graded

TECH 30 - Introduction to Python Programming

3 unit(s)

Introduction to Python programming, data types, arithmetic and strings, conditional execution, loops, functions, lists and files, exception handling, sets and dictionaries.

Prerequisite(s): MATH 71 or MATH 71X or MATH 30 or MATH 30X.

Grading: Letter Graded

TECH 31 - Quality Assurance and Control

3 unit(s)

Introduction to concepts and statistical methods that companies use to manage and improve quality. Sampling inspection, statistical process control, quality function deployment, cost of quality, design of experiment and Taguchi's method for designing in quality.

Prerequisite(s): BUS2 90 or equivalent.

Grading: Letter Graded

TECH 41 - Machine Shop Operations and Safety

1 unit(s)

Introduction to basic machine shop safety and skills. Fabrication of mechanical components and assemblies from engineering drawings, performing tolerance inspection and developing fabrication process plans.

3 hours lab.

Course is repeatable for up to 3 units.

Prerequisite(s): ME 20 or TECH 20A or CE 20 or equivalent.

Grading: Letter Graded

Cross-listed with ME 41. Technology is responsible for scheduling.

TECH 42 - Manufacturing and Machine Shop Projects and Practices

1 unit(s)

Individual manufacturing processes and machine shop practices. Fabrication of mechanical components and assemblies in fulfillment of senior, course, special, and approved student club assignments and

projects.

Misc/Lab: 3 hours lab

Course may be repeated for credit for up to 4 units.

Prerequisite(s): TECH 41/ME 41 (with grade "C-" or better).

Grading: Credit/No Credit

Cross-listed with ME 42. Technology is responsible for scheduling.

TECH 45 - Facilities Design & Planning

3 unit(s)

Construction, planning, and maintenance of physical facilities and equipment for manufacturing operations. Sustainable practices and standards, plant facilities layout/design, regulatory and environmental compliance, safety/security, energy conservation. Production line planning and OSHA and NIOSH standards.

Prerequisite(s): TECH 20A or CE 20 or ME 20, or equivalent.

Grading: Letter Graded.

Sustainability Focused - SDG 12: Responsible Consumption and Production

TECH 46 - Machine Operations and Management

3 unit(s)

Machining processes using computer-numerically-controlled and manual machines, including turning, milling, drilling, grinding, and sawing machines. Manual and computer-aided part programming. Management of machining environment including processes, tooling, instruments, equipment, personnel, and safety.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): TECH 41 or ME 41.

Grading: Letter Graded

TECH 60 - Introduction to Electronics

3 unit(s)

Emphasizes practical electronics applications and products. DC and AC theory; Ohm's Law, Kirchhoff's Laws, Power Laws, network theorems, schematic diagrams, instrumentation and measurement, and functions of discrete components.

Lecture 2 hours/lab 3 hours.

Pre/Corequisite(s): MATH 71 or MATH 71X or MATH 30 or MATH 30X or equivalent.

Grading: Letter Graded

TECH 62 - Analog Circuits

3 unit(s)

Semiconductor theory; p-n junction, bipolar transistors, JFETs and MOSFETs, optoelectronic devices. Operational amplifiers and 555 timers. Device applications: comparators, signal generators, active filters, instrumentation amplifiers, voltage regulators and power supplies.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): TECH 60, MATH 71 or MATH 71X or MATH 30 or MATH 30X.

Grading: Letter Graded

TECH 63 - Analog and Digital Circuits

3 unit(s)

Logic gates emphasizing TTL and CMOS. Design techniques. Combinational circuits, counters, registers, multiplexers, Semiconductor theory. Operational amplifiers. Device applications, signal generators, voltage regulators and power supplies.

Prerequisite(s): TECH 60, MATH 71 MATH 71X or MATH 30 MATH 30X or equivalent.

Grading: Letter Graded

Note(s): Lecture 2 hours/lab 3 hours.

TECH 65 - Introduction to Networks

3 unit(s)

Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced. Students build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): MATH 18A or eligible for MATH 19.

Grading: Letter Graded

TECH 66 - Network Administration

3 unit(s)

Internetworking devices and systems. Network Administration and Support. Enterprise and Distributed Networks. Wide-Area and Large Scale Networks. Solving Network problems. Using the Resources of the Internet. Future networking technologies. Telemeter networks. Manufacturing Automation. Systems Networks, Storage area network.

Misc/Lab: Lecture 2 hours/Lab 3 hours.

Prerequisite(s): TECH 65.

Grading: Letter Graded

TECH 67 - Introduction to Internet of Things

3 unit(s)

Introduction to Internet of Things (IoT) fundamentals, development of the knowledge and skills required for related technologies and hands-on, problem-solving experience. Designing and connecting IoT devices to capture data and control the physical world.

Misc/Lab: Lec 2 hours/Lab 3 hours.

Prerequisite(s): TECH 60, TECH 65.

Grading: Letter Graded

TECH 68 - Internet of Things Systems

3 unit(s)

Cyber-physical systems as control systems, including problem formulation, mathematical representation, and analysis. IoT system components of switching, routing, security, wireless, virtualization, and their integration into end-to-end IoT systems.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): TECH 67.

Corequisite(s): TECH 30 or CMPE 30.

Grading: Letter Graded

TECH 115 - Automation and Robotics

3 unit(s)

Theory and application of automation elements including analog and digital sensors, controllers, indicators, actuators. Control modes for proportional, derivative, and integral control systems. Hands-on integration practices among PLC, robots, automatic identification devices, computers, and other industrial equipment.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): TECH 60; MATH 71 or MATH 71X; and, PHYS 2A & PHYS 2B, or PHYS 50 & PHYS 51.

Grading: Letter Graded

TECH 136 - Software Quality Management

3 unit(s)

Software quality management standard processes and techniques, certification standards. Web programming application. Mobile network applications. Software testing methodology. Role of software quality managers in a computer network system organization.

2 hours lecture/3 hours lab.

Prerequisite(s): TECH 30 or CMPE 30, BUS2 90, and TECH 173

Grading: Letter Graded

TECH 140 - Product Design and Prototyping

3 unit(s)

Advanced product design employing 3D modelling technique. Measure impact of designs focusing on

materials, manufacturing, product use and disposal. Projects based learning incorporating design intent, materials selection and advanced manufacturing technologies. Laboratory exercises for product design, development and fabrication.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): TECH 20A or ME 20; CHEM 1A or CHEM 30B; and, MATH 71 or MATH 71X or MATH 30 or MATH 30X.

Grading: Letter Graded.

Sustainability Focused - SDG 12: Responsible Consumption and Production

TECH 143 - Polymers and Composites Fabrication Technology

3 unit(s)

Fundamental aspects of modern manufacturing technology using polymeric and composite materials. Hands-on activities in casting, molding, coating, thermoforming, and fiber reinforcement. Concepts of design, analysis, and fabrication.

Prerequisite(s): TECH 20A, CHEM 1A, and PHYS 2A.

Grading: Letter Graded

TECH 145 - Lean Manufacturing

3 unit(s)

Exploration and practice of techniques for reducing waste to optimize the value stream in both manufacturing and non-manufacturing environments. Toyota Production System, Value Stream Mapping, 7 Wastes, 5S, Just-in-Time, TPM, Kaizen.

Prerequisite(s): BUS2 90.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

TECH 146 - 3D Printing and Applications

3 unit(s)

Introduction to technologies in 3D printing, equipment, processes, and materials. Applications for a variety of markets and industry in accelerating time to market for products, improving manufacturing operations, and efficiency. Hands-on experience through CAD design to product realization.

Prerequisite(s): TECH 20A, TECH 25, TECH 140

Grading: Letter Graded

TECH 147 - Manufacturing Analysis & Management

3 unit(s)

Design, operation, and control of economic production systems using techniques to promote sustainability and minimize environmental impact. Emphasis on the physical design of high-performance manufacturing including production flow, scheduling, work flow, layout of manufacturing plants, and material handling.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): TECH 45, TECH 46, and TECH 115.

Pre/Corequisite(s): TECH 140.

Grading: Letter Graded

Sustainability Focused - SDG 12: Responsible Consumption and Production

TECH 149 - Smart Manufacturing

3 unit(s)

Smart manufacturing including sensors used to facilitate Industrial IoT in machine monitoring, data analytics, digital twin modeling and visualization in production and workflow, smart automation, robotic delivery systems, use of machine learning, additive manufacturing, augmented reality, quality control in manufacturing, and industry tours.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): TECH 147.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

TECH 163 - Telecommunications Systems

3 unit(s)

Communication systems. Types of Modulation. Transmitters and receivers. Digital communications. Data transmission. Digital modulation and modems. Multiplexing and multiple-access techniques. Wireless communication systems. Microwave devices. Satellite communications. Fiber optics systems.

Prerequisite(s): TECH 62, TECH 63.

Grading: Letter Graded

TECH 165 - Wireless Communications Technologies

3 unit(s)

Digital wireless technologies. RF Communications. Wireless Personal Area Networks. Wireless Local Area Networks. Wireless Metropolitan Area Networks. Wireless Satellite Fixed Broadband. Wireless Wide Area Networks. Radio Frequency Identification. Wireless Communication in Business. Emerging wireless technologies

Lecture 3 hours/Lab 3 hours.

Prerequisite(s): TECH 63, TECH 65.

Grading: Letter Graded

TECH 167 - Control Systems

3 unit(s)

Theory and applications of feedback systems, transfer functions and block diagrams. Transducers, analog and digital controllers, signal conditioners and transmission. Analysis, testing, and troubleshooting of

electronic systems with feedback.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Prerequisite(s): TECH 63, TECH 115, and CMPE 30 or CS 49C or CS 49J.

Grading: Letter Graded

TECH 169 - Applied Electronic Design

3 unit(s)

Design, test, simulation, development and implementation of electronic systems for control of industrial processes using project management techniques and team work. Hardware, software, and system interfacing.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Pre/Corequisite(s): TECH 167.

Grading: Letter Graded

TECH 170 - Connected Products Applications

3 unit(s)

Introduction to connected products and applications, defining user (UX) for web and software and UX for Connected Things. Presenting models of human-computer interaction, design processes and product/service definition and strategy. Cases studies of IoT systems and design.

Misc/Lab: Lec 2 hours/ Lab 3 hours.

Prerequisite(s): TECH 68.

Grading: Letter Graded

TECH 171 - Network Security & Prevention Management

3 unit(s)

Approaches to IT system security including physical, application, operating system, cyber-, and network security. Using switches, routers, adaptive security appliance, firewalls, and intrusion protection systems to implement comprehensive security policies. IPv4 and IPv6 security, VPN technology.

Prerequisite(s): TECH 170 or BUS4 111.

Grading: Letter Graded

TECH 172 - Database Server System Management

3 unit(s)

Practical big data analytics and management systems. Issues and problems involved in massive on-line repository systems. Current practical techniques for satisfying the needs of such systems. Current approaches that are likely to provide a basis for tomorrows solutions.

Misc/Lab: Lec 2 hours/Lab 3 hours.

Prerequisite(s): TECH 171, TECH 173, TECH 179.

Grading: Letter Graded

TECH 173 - Cloud Computing System Management

3 unit(s)

Technologies, hardware and software applications in cloud computing. Implementation of cloud computing in the enterprise through exploration of public and private clouds, comparison. Performance monitoring of data traffic flow and process improvement for the required server systems.

Prerequisite(s): TECH 30 and TECH 65.

Grading: Letter Graded.

TECH 174 - Blockchain Technology and Applications

3 unit(s)

Fundamentals and applications of Blockchain Technology; transparent, secure, immutable and distributed database used as the underlying technology for Cryptocurrency. Types of Blockchain and real-life applications for potentially disruptive technology and its impact on business world and society.

Prerequisite(s): TECH 30 or instructor consent.

Grading: Letter Graded

TECH 175 - Industrial Internet of Things (IIoT)

3 unit(s)

Techniques to collect and analyze sensor data to maximize industrial systems efficiency through predictive and preventive maintenance, machines monitoring, supply-chain optimization, smart energy, smart grid, big data analytics, smart connected systems, and cyber threats prevention.

Prerequisite(s): TECH 30 and TECH 65; or instructor consent.

Grading: Letter Graded

TECH 176 - Machine Learning Technology and Applications

3 unit(s)

Overview of machine learning in computer network systems with emphasis on practical applications focusing on supervised and unsupervised techniques and methods, including classification and clustering. Emphasis on big data analytics and data mining.

Prerequisite(s): TECH 30 or instructor consent.

Grading: Letter Graded

TECH 177 - Data Science in Industrial Systems Management

3 unit(s)

Focus on applications of descriptive, predictive, and prescriptive analyses in pattern recognition, system improvement and optimization. Data mining techniques, decision tree modeling, regression analysis, and big data management for informed decision making in industrial systems management.

Prerequisite(s): TECH 31 or equivalent courses with instructor consent.

Grading: Letter Graded

TECH 178 - Autonomous Systems Technology

3 unit(s)

Autonomous systems including vehicles, UAV, drones, warehouse and delivery systems, trucks, and shuttles. Review of the fundamental components of such autonomous systems including sensors, vision systems, actuators, embedded computing, intelligent control and predictive modeling, regulations, and ethics.

Prerequisite(s): TECH 115 or TECH 170 or instructor consent.

Grading: Letter graded.

TECH 179 - Cyber Security System Management

3 unit(s)

Key issue associated with protecting information assets. Levels of protection and response to security incidents. Planning for security and management of the system. Application of software, cryptography, encryption methods. Mobile and cloud systems security.

Prerequisite(s): TECH 171 or BUS4 111.

Grading: Letter Graded

Sustainability Related

TECH 180A - Individual Studies in Electronics and Computer Technology

1-4 unit(s)

Prerequisite(s): Upper division standing and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

TECH 180B - Individual Studies in Manufacturing Technology

1-4 unit(s)

Prerequisite(s): Upper division standing and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

TECH 180J - Individual Studies in Technology Issues

1-4 unit(s)

Prerequisite(s): Upper division standing and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

TECH 190A - Senior Project I

3 unit(s)

Half of one-year senior team design projects. Professional development and proposal preparation with feasibility plans, specifications, oral/written reports, and career and professional seminar participation. Project proceeds over two semesters from problem definition and design to validation, prototype

construction, and testing.

Prerequisite(s): ENGR 100W with a grade of C or better and either TECH 115 and TECH 140 and TECH 147, or TECH 170 and TECH 171.

Grading: Letter Graded

Note(s): TECH 190A and TECH 190B sequence must be completed in the same academic year.

Sustainability Related - SDG 12: Responsible Consumption and Production

TECH 190B - Senior Project II

3 unit(s)

Second half of a one-year team project carried out under faculty supervision. Construction, testing, and evaluation of the design from TECH 190A, culminating in demonstrations and written and oral presentations to faculty and peers.

Prerequisite(s): TECH 190A.

Grading: Letter Graded

Sustainability Related - SDG 12: Responsible Consumption and Production

TECH 192 - International Program Studies

1-14 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

TECH 195 - Cooperative Internship

1-3 unit(s)

Provides an educational strategy that links classroom learning and student interest with the acquisition of knowledge in an applied work setting. Students undertake a significant experiential learning opportunity, typically with a company, non-profit, governmental, or community-based organization.

Prerequisite(s): Upper division standing, course contract, instructor consent

Grading: Credit/No Credit

TECH 198 - Technology and Civilization

3 unit(s)

History, development, and use of technology in different cultures. Technology's impact on society, global environment, the workplace, cultural values, gender roles, and newly industrialized countries of the world.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CMPE 198 / ENGR 198 / ME 198. Technology is responsible for scheduling.
Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

TECH 199A - Special Topics in Electronics & Cmp Tech

3 unit(s)

Fundamentals of being a successful college student on the path to a profession in Industrial Technology. Hands-on project oriented course with applications in manufacturing systems, robotics, plant operation, materials and handling, computer network systems, IoT, and internet hardware. Guest speakers and tours of related industries.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

TECH 199B - Special Topics in Manufacturing Systems

3 unit(s)

Special topics in Manufacturing Systems. Content varies from semester to semester. Repeatable for a total of 6 units.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

TECH 200 - Research Methods for Engineering and Technology

3 unit(s)

Current applied research methods applied to problems in engineering, technology, and other technical fields. Exposure to current literature, scientific/technological research ethics, research and experimental design and methods, skills in research proposal development and locating funding.

Prerequisite(s): STAT 115 (or equivalent) and graduate standing.

Grading: Letter Graded

TECH 230 - Six-Sigma and Continuous Improvement Systems Management

3 unit(s)

Six-Sigma quality systems for design production and business processes. Statistical foundations, implementation strategies, and practical industrial applications. Methods and practices of achieving continuous quality improvement, defect reduction, project planning and management methods to achieve universal participation in process improvement.

Prerequisite(s): STAT 115 or equivalent.

Grading: Letter Graded

TECH 231 - Systems Reliability and Maintainability

3 unit(s)

Analysis of models for systems reliability including static, dynamic, and probabilistic engineering models; reliability estimation and optimization, life cycle prediction techniques; failure modes and effects analysis; maintainability prediction and analysis.

Prerequisite(s): TECH 230.

Grading: Letter Graded

TECH 232 - Advanced Statistical Process Control

3 unit(s)

Analysis of advanced statistical process control (SPC) systems for monitoring and controlling process performance. Statistical methods for sample selection, probability theory, partition of variation, blanket studies, out-of-control action plans, process capability measurement, and SPC implementation strategies and analysis.

Prerequisite(s): STAT 115.

Grading: Letter Graded

TECH 233 - Design and Analysis of Experiments

3 unit(s)

Analysis of experimental design strategies for process and design improvement. Industrial application of single factor, multi-factor, and optimization designs. Experimental analysis using t-tests, ANOVA, Chi-square, linear and multiple regression techniques. Model building and model validation.

Pre/Corequisite(s): TECH 232.

Grading: Letter Graded

TECH 234 - Quality Systems Management: ISO 9000 and 14000

3 unit(s)

Strategies for developing and implementing ISO standards: Project management and planning, cost estimation, supply chain management, audit plans and documentation systems for ISO system compliance. Analysis of ISO 9000 and 14000 quality systems for product design, development and production.

Grading: Letter Graded

TECH 235 - Measurement Systems and Analysis

3 unit(s)

Analysis of variables and attributes methods for measurement systems analysis and control including; repeatability, reproducibility, accuracy, linearity and stability. A survey of measurement and testing systems; dimensional metrology, destructive and nondestructive testing, calibration methods, and inspection equipment and techniques.

Prerequisite(s): TECH 232.

Grading: Letter Graded

TECH 236 - Foundations in Quality Assurance for Software

3 unit(s)

Analysis of software development strategies, design and configuration control systems, development standards, performance measurement, documentation and revision control systems, defect reduction methods, modular design approaches, and software maintainability.

Prerequisite(s): TECH 232, TECH 200, TECH 234, and CS 46A or equivalent.

Grading: Letter Graded

TECH 239 - Design Assurance in Product Development

3 unit(s)

Analysis of product development strategies, understanding design constraints and market conditions, design and configuration control systems, documentation and revision control systems, design for manufacturability, phase review approaches for new product introduction, design reviews, and developing and maintaining design guidelines.

Prerequisite(s): TECH 200, TECH 230 and TECH 234.

Grading: Letter Graded

TECH 241 - Application of Artificial Intelligence in Manufacturing

3 unit(s)

Application of artificial intelligence in manufacturing ecosystems in predicting production and process rates, determination of accuracies, machinery performance analysis, and planning preventive maintenance to optimize system operation, through continuous data collection and analysis.

Prerequisite(s): TECH 30 and TECH 176, or instructor consent.

Grading: Letter Graded

TECH 242 - Vision System Application in Manufacturing

3 unit(s)

Course covers computer vision techniques such as convolution, transformations, segmentations, background subtraction, shape detection, object detection, tracking, and classification. Specific emphasis on practical manufacturing applications such as machinery vision systems, defect detection, packaging, barcode recognition, and safety in production lines.

Prerequisite(s): Graduate Standing or Instructor Consent.

Grading: Letter graded.

TECH 244 - Selective Laser Melting Process

3 unit(s)

Introduction to the latest developments and critical challenges of selective laser melting (SLM) process to provide relevant knowledge and practical experience in developing novel SLM process, equipment, and applications. Project based learning, emphasizing the principles of powder metallurgy in SLM of aerospace

materials.

Prerequisite(s): TECH 146 or instructor consent.

Grading: Letter graded.

TECH 245 - Advanced Solid-State Welding/Joining Processes

3 unit(s)

Introduction to the latest developments and critical challenges of friction stir welding/joining and processing (FSW/J&P) to provide relevant knowledge and practical experience in developing novel FSW/J&P processes, equipment, and applications. Project based learning, focusing on the process principle, metallurgical, and mechanical aspects of FSW/J&P.

Prerequisite(s): TECH 140 or instructor consent.

Grading: Letter graded.

TECH 251 - Cybersecurity Operations Management

3 unit(s)

Apply cybersecurity management principles to analyze cybersecurity policies; approaches to risk analysis; plan for business continuity and disaster recovery; practice incident response to prevent intrusions and attacks; exercise managing firewalls, cloud security, identity management, intrusion detection systems, cryptography, and VPNs.

Prerequisite(s): Graduate Standing and Instructor Consent.

Grading: Letter graded.

TECH 273 - Computer and Network System Auditing

3 unit(s)

Emphasis on information security and security management, computer crime, legal issues, controls and auditing systems, scanning threat reporting. Evaluations of security infrastructures in a controlled environment using vulnerability assessment tools to assess risks and evaluate security controls on the network.

Prerequisite(s): Graduate Standing and Instructor Consent.

Grading: Letter Graded

TECH 290 - Graduate Problems

2-4 unit(s)

Graduate study or research of technical problems.

Prerequisite(s): TECH 200 and instructor consent. Not available to Open University Students.

Grading: Credit/No Credit

TECH 295A - Engineering Technology Project I

3 unit(s)

Advanced individual work in Engineering Technology, including but not limited to research, development, simulation, and/or fabrication and test. TECH 295A is the first semester of a two-semester long graduate

project.

Prerequisite(s): Advancement to candidacy for the master's degree and instructor consent.

Grading: Letter graded/Incomplete.

TECH 295B - Engineering Technology Project II

3 unit(s)

Continuation of TECH 295A. Students complete the in-depth project, write a technical report, and make a comprehensive presentation.

Grading: Letter graded/RP.

TECH 298 - Graduate Project

2-4 unit(s)

Graduate study research of professional problems.

Prerequisite(s): Advancement to candidacy for the master's degree and instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

TECH 299 - Master's Thesis

2-6 unit(s)

Prerequisite(s): Advancement to candidacy for the master's degree and instructor consent. Not available to Open University Students.

Grading: Mandatory Credit/No Credit/RP

TECH 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project.

Course may be repeated for credit for up to 16 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit.

Theatre Arts

TA 5 - Acting

3 unit(s)

Basic acting class for non-theatre arts majors. Exploration of inner and external resources for performance, analysis of text and character, guidelines for successful rehearsal and performance. Learning to be seen, heard, understood and believed.

Satisfies C1: Arts.

Grading: Letter Graded

TA 10 - Theatre Appreciation

3 unit(s)

Study of the historical and cultural contexts of theatre around the world. Seeing and critical writing about plays. Hands-on experiences in the arts and crafts of live theatre.

Satisfies C1: Arts.

Grading: Letter Graded

TA 11 - Script Analysis

3 unit(s)

Detailed analysis of dramatic and screenplay scripts related to performance and production.

Grading: Letter Graded

TA 13 - Great Comedies for Theatre

3 unit(s)

This course is designed to introduce students to comedic dramatic literature and the performance techniques to stimulate the proper audience response.

Satisfies C2: Humanities.

Grading: Letter Graded

TA 17 - Intermediate Acting

3 unit(s)

Scene Study class based on Stanislavsky Method. Students rehearse and memorize contemporary scenes performed for critique by the instructor. Acting techniques will focus on analysis, internal methods and characterization for playing scenes. Lab exercises additionally will include disciplined stage movement and improvisation techniques.

Misc/Lab: Lecture 2 hours/lab 2 hours.

Prerequisite(s): TA 5

Pre/Corequisite(s): TA 11

Grading: Letter Graded

TA 48 - Voice & Movement for the Actor

3 unit(s)

Course focuses on using voice & movement to understand different stages of human life, in its biological and cultural configurations we bring to the stage. Voice and movement shapes, unites and differentiates our communications and expressions as performers.

Satisfies E: Human Understanding & Development.

Grading: Letter Graded

TA 51A - Scenery and Props for the Performing Arts

1 unit(s)

Introduction to facilities, materials and tools; safety guidelines for production shop and stage. Standard construction techniques and production vocabulary.

Grading: Letter Graded

Note(s): Lec and Misc/Lab

TA 51B - Costume for the Performing Arts

1 unit(s)

Costume production laboratory introducing costume construction techniques and materials, basic alteration techniques, costume craft techniques; costume shop organization, management, personnel and equipment.

Misc/Lab: Activity 2 hours.

Grading: Letter Graded

TA 51C - Lighting & Sound for the Performing Arts

1 unit(s)

Introduction to the concepts and tools used in creating lighting and sound for onstage productions. Includes supervised hands-on activity with individual instruction in basic techniques and tools used in lighting and sound for the stage.

Lecture 0.5 hours/Activity 1.5 hours.

Grading: Letter Graded

TA 55 - Intro to Design for Theatre

3 unit(s)

An introduction to the expansive field of visual and audio design for the performing arts, including scenic design, costume design, lighting design, sound design, and video/projection design. In exploring the practice of these rapidly evolving forms, students will exercise strategies for applying creative, fine-arts based solutions to a variety of challenges. Students will learn how theatrical designers collaborate and respond to literary prompts, such as play scripts, with art and technology to create physiological environments that impart psychological and social meanings. Students will also have opportunities to participate directly in university productions through a hands-on practicum (lab) component.

2 hours of Activity/2 hours Lecture.

Satisfies C1: Arts.

Grading: Letter Graded

TA 64 - Make-up for Performing Arts

3 unit(s)

Makeup techniques for stage, television, film and print. Course covers makeup design, makeup materials and two dimensional application techniques. Laboratory work on actual stage productions, video and film shoots.

Misc/Lab: Lecture/demonstration 2 hours/lab 2 hours.

Grading: Letter Graded

TA 91 - Scenic Painting & Props

1-3 unit(s)

Supervised hands-on activity with individual instruction in basic techniques and tools essential to successful stage production in scene painting for the theatre, as well as the many facets of being a property master for theatrical productions.

Lecture 2 hours/Lab 2 hours.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded.

TA 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

TA 100W - Writing Workshop: Theatre Arts

3 unit(s)

Development of skills appropriate to the theatre profession: criticism, research, publicity and promotion materials, and cover letter and resume composition.

Satisfies Writing in the Disciplines (WID).

Prerequisite(s): A3 or equivalent second semester composition course (with a grade of C- or better); completion of core GE; and upper division standing. Or Graduate or Postbaccalaureate level. Allowed Declared Majors: Radio/Television/Film, Theatre Arts, Dance, Animation/Illustration, Interdisciplinary Studies.

Grading: Letter Graded

Note(s): Must be passed with C or better to satisfy the CSU Graduation Writing Assessment Requirement (GWAR).

TA 103 - Musical Theatre

3 unit(s)

The repertoire of musical theatre with intensive training in appropriate acting, singing and dance techniques.

Misc/Lab: Lecture 2 hours/lab 3 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

TA 110 - Advanced Acting

3 unit(s)

Preparation, analysis and presentation of styles ranging from Chekhov to Shakespeare are the basis of this advanced scene-study course. Exploration of roles to develop authority, characterization, range and clarity are at the core of this class. Repeatable once for credit.

Misc/Lab: Lecture 2 hours/lab 3 hours

Course may be repeated for credit for up to 6 units.

Prerequisite(s): TA 11, TA 17 and instructor consent.

Grading: Letter Graded

TA 112 - Rehearsal and Performance

3 unit(s)

Analysis and production of a dramatic work that presents unusual problems of background, interpretation, style or meaning. Lectures, discussions, readings; rehearsal of play and participation in other aspects of the final production.

Misc/Lab: Lab hours required.

Course may be repeated for credit.

Prerequisite(s): TA 5, TA 17 or instructor consent.

Grading: Letter Graded

TA 113 - Acting and Professional Career Prep

3 unit(s)

External techniques for playing a role and for beginning a professional career in acting for stage and film are the primary focus of this class. Exercises in the TV studio and theatre will focus on quick study, taking stage, commercial auditions and voice-over practice, along with resume/picture/portfolio selection, audition

techniques, selecting an agent, finding work.

Misc/Lab: Lecture 2 hours/lab 2 hours.

Prerequisite(s): TA 11, TA 17 or instructor consent.

Grading: Letter Graded

TA 116 - Directing

3 unit(s)

Study and discussion of and practice in the fundamental principles of play direction; stage composition, movement, business, tempo; directing procedures; play selection and interpretation; problems in styles, casting and rehearsal and performance.

Misc/Lab: Lecture 2 hours/activity 2 hours.

Prerequisite(s): TA 11, and TA 5 or TA 17.

Grading: Letter Graded

TA 117 - Practice in Acting or Directing

1-3 unit(s)

Director analyzes, casts, rehearses scenes. The actor performs in a variety of roles.

Activity 6 hours.

Course is repeatable for up to 9 units when content changes.

Prerequisite(s): TA 17 or instructor consent.

Grading: Letter Graded

TA 120 - Theatre History

3 unit(s)

Examines the historical roots, many manifestations, and diversity of theatrical performances with particular attention to theatre's role within and between cultures.

Prerequisite(s): TA 11 or instructor consent.

Grading: Letter Graded

Cross-listed with ENGL 120. Film and Theatre is responsible for scheduling.

TA 121 - Topics in Performance History

3 unit(s)

Examines relations between performance and unique historical/cultural conditions that motivate change or continuity in a specific area of performing arts. Not a historical survey, but a problem-centered course that focuses on developing the power to think historically about performance.

Prerequisite(s): TA 11 or instructor consent.

Grading: Letter Graded

TA 127 - Contemporary Theatre

3 unit(s)

Contemporary plays from 1980s to present and important theatre practices for this period. Explores contemporary theatre by critically examining selected plays and productions of the last fifty years. The course will concentrate how the selected plays and productions express the diversity and complexity of postmodern society. The class will look at various performance styles and how they are a direct response and/or reaction to major changes in the social and political landscape. The course will focus on how theatre represents contemporary views of people, events and ideas through specific performance discourses.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with ENGL 127. Film and Theatre is responsible for scheduling.

TA 128 - Introduction to Playwriting

3 unit(s)

Writing in dramatic form: plot structure, characterization, content and theme. Analysis of plays. Exercises in writing.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ENGL 128. Film and Theatre is responsible for scheduling.

TA 129 - Advanced Playwriting

3 unit(s)

Writing in dramatic form-plays, film scripts, television scripts. Study and discussion of models. Criticism of student writing.

Course is repeatable for up to 6 units.

Prerequisite(s): TA 128 (or equivalent) and instructor consent. Upper division standing or instructor consent.

Grading: Letter Graded

TA 131 - Storytelling

3 unit(s)

Course focuses on Storytelling and Creative Dramatics to teach Multiple Subject Credential Students theatre techniques.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

TA 144 - Shakespeare I

4 unit(s)

Major plays such as Twelfth Night, Henry IV, Part I and Hamlet.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ENGL 144. English and Comparative Literature is responsible for scheduling.

TA 145 - Shakespeare and Performance

4 unit(s)

Course examines in depth several of Shakespeare's plays, specifically addressing issues of performance.

We will discuss each play in the context of its original performance during Shakespeare's time and its life on stage and screen in the ensuing centuries.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with ENGL 145. English and Comparative Literature is responsible for scheduling.

TA 148 - Voice & Movement for Performance

3 unit(s)

Explores the expressive, restorative and communicative nature of movement and voice as applied to human performance, the arts, therapy, education and management. Techniques focus on students developing their "natural voice" and exploring elements of physical expression by examining how the body can communicate story. Course content may change each semester and be tailored to be more advanced for those students repeating the course.

Lecture 2 hours/lab 3 hours.

May be repeated 2 times for up to 6 units.

Prerequisite(s): TA 48 or upper division standing.

Grading: Letter Graded

Cross-listed with CA 148. Film and Theatre is responsible for scheduling.

TA 151 - Lighting Design for Performing Arts

3 unit(s)

Theory and practice of designing lighting for the performing arts. Presents broad-based understanding of the design process and responsibilities; the importance of collaboration and communication in the theatre; and the skill of articulately presenting design ideas visually and orally.

Lecture 2 hours/Activity 2 hours

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing, TA 55, and TA 51C; or instructor consent.

Grading: Letter Graded

TA 153 - Costume Design for Performing Arts

3 unit(s)

Theory and practice of designing costumes for the performing arts. Presents broad-based understanding of the design process and responsibilities; the importance of collaboration and communication in theatre; and the skill of articulately presenting design ideas visually and orally.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): TA 51B and TA 55, or instructor consent.

Grading: Letter Graded

TA 154 - Scenic Design for Performing Arts

3 unit(s)

The theory and practice of designing scenery for the performing arts. This course will provide students a broad-based understanding of the design process and responsibilities; the importance of collaboration and communication in theatre & film; and the skill of articulately presenting design ideas visually and orally.

Lecture 2 hours/Activity 2 hours.

Prerequisite(s): TA 55 and TA 51A, or instructor consent.

Grading: Letter Graded

TA 158 - Model Making & Drafting Film & Theatre

3 unit(s)

Explores the processes, methods, tools, and skills used for scale model making and drafting for stage and screen.

Misc/Lab: Lecture 2 hours/lab 2 hours.

Course may be repeated for credit for up to 9 units.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

TA 161 - Theatre Design Topics

3 unit(s)

Discussion of theatre design including scenic, property, costume, makeup, lighting, sound and facility design. Subject matter varies depending on specialty of faculty. Course is repeatable for credit.

Lecture 2 hours/activity 2 hours.

Repeatable for credit.

Prerequisite(s): TA 55 and upper division standing, or instruct consent.

Grading: Letter Graded

TA 167 - Theatre in Education

3 unit(s)

Equips prospective pre-K to high school educators with the basic knowledge, skills, and strategies to effectively organize and provide sequential and culturally diverse theatre arts education in the school setting and beyond. Emphasis is on theatre arts teaching methods, curriculum development and hands-on theatre experiences.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

TA 168 - Stage Management

3 unit(s)

Exploration of the planning, communication, organizational structure, and practices of stage management. Topics include responsibility, communication, audition and rehearsal supervision, audience services coordination, working relationships with performance and production staff, and the health and safety issues for performers and technical staff.

Lecture 2 hours/lab 1 hour.

May be repeated for credit for up to 6 units.

Grading: Letter Graded

TA 170A - Introduction to Acting and Directing for the Camera

3 unit(s)

Directing and Acting techniques for shaping a narrative and adjusting performance; voice and microphone use, movement for camera, gesture and the frame, role analysis for non-sequential performance, concentration, relaxation. Preparation, performance and critique of taped scenes.

Lecture 2 hours/Activity 2 hours.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): RTVF 130 or TA 17.

Grading: Letter Graded

TA 170B - Advanced Acting and Directing for the Camera

3 unit(s)

Using the grammar of film and narrative storytelling to direct, produce and write contemporary film and television scenes. Use of single- and multi-camera techniques.

Lecture 2 hours/Activity 2 hours.

Course is repeatable for up to 6 units.

Prerequisite(s): TA 170A or RTVF 130 or RTVF 132A.

Grading: Letter Graded

TA 172 - The Arts in U.S. Society

3 unit(s)

Study of American arts and artists in their aesthetic, social, and political contexts, focusing on 20th and 21st centuries. Arts examined may include architecture, poetry, music, visual arts, dance, theatre, performance art, and fiction. Special emphasis on issues of cultural diversity and social justice.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CA 172 / ENGL 172 / MUSC 172. Humanities is responsible for scheduling.

TA 173 - Thinking About Contemporary World Arts

3 unit(s)

An interdisciplinary investigation of the connections between the contemporary arts and global cultures. Use of critical and creative thinking to develop global understanding and to explore personal and cultural identities.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education, and upper-division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Cross-listed with CA 173 / ENGL 173 / MUSC 173. Humanities is responsible for scheduling.

TA 180 - Individual Studies

1-3 unit(s)

Directed study in specified fields not covered by offered courses.

Prerequisite(s): Department chair consent.

Grading: Credit/No Credit

TA 191 - Theatre Production Workshop

3 unit(s)

Supervised hands-on activity with individual and group instruction in the production of plays and musicals. Areas of participation include scenery construction, painting, properties, costume construction, lighting & sound, running crew, and more. Students learn to use their unique creative potential to further develop their production, design, and technology skills in theatre.

Activity 6 hours.

Course may be repeated for credit for up to 12 units.

Pre/Corequisite(s): TA 51A, TA 51B, & TA 51C, or instructors consent.

Grading: Letter Graded.

TA 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

TA 198 - Internship

3 unit(s)

Supervised internships with approved radio, television or theatre organizations. Written evaluation submitted by sponsor and student after field work. Repeatable for credit up to 6 units.

Misc/Lab: Lecture 3 hours/Activity 6 hours

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Junior or senior standing and instructor consent.

Grading: Letter Graded

TA 199H - Honors Program

2-3 unit(s)

Demanding project demonstrating student's ability to do independent action and research. Written thesis or, in the case of the creative project, analysis and evaluation of the aesthetic problem; thesis to be defended orally by the student before a theatre arts staff committee. May be repeated once for credit.

Course may be repeated for credit for up to 6 units.

Prerequisite(s): Senior standing/3.0 GPA; by invitation only.

Grading: Credit/No Credit

Cross-listed with RTVF 199H. Film and Theatre is responsible for scheduling.

TA 221I - Performing Narratives

4 unit(s)

Practice in the application of theories and methods for performing narratives, broadly construed. Students

will practice creating, directing, and performing work adapted from literary texts, ethnographic interviews, social justice issues, and/or lived experience. Required of graduate students who wish to do thesis performances.

Prerequisite(s): Graduate standing, or instructor consent.

Grading: Letter Graded

Cross-listed with COMM 221I. Communication Studies is responsible for scheduling.

TA 225 - Seminar in Shakespeare

4 unit(s)

A close study of selected plays and of selected major issues in Shakespearean criticism. With prior permission of graduate advisor may be repeatable once for credit.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Classified standing or instructor consent.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Cross-listed with ENGL 225. English and Comparative Literature is responsible for scheduling.

Transportation Management

MTM 201 - Transportation Systems and Society

3 unit(s)

Core transportation knowledge and systems thinking. Characteristics of travel modes and infrastructural elements that produce transportation systems; public, private, and nonprofit actors involved in transportation; transportation systems as levers toward achieving economic vitality, social equity, environmental sustainability, and community goals; and key challenges transportation system managers will face in the coming decade.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

MTM 202 - Introduction to Transportation Funding and Finance

3 unit(s)

Introduces financial and managerial uses of accounting information systems and concepts. Includes standard costs, cost-volume-profit relationships, contribution analysis, budgeting, performance measurement, variance analysis, working capital, valuing capital costs and financing investment decisions. Explores use of complex information decision systems.

Grading: Letter Graded

MTM 203 - Transportation Marketing and Communications Management

3 unit(s)

Emphasizes positioning services to meet the needs of particular groups/market segments and marketing the system to new users/user groups (including developing the public/private sector relationship). Examines strategies for developing the community relationship with marketing and public relations efforts (and using the media to advantage).

Grading: Letter Graded

MTM 214 - Transportation Policy and Regulation

3 unit(s)

Surveys political frameworks of governments as both customer and provider; development of transportation policy with public involvement; and performance measurement with public oversight. Reviews policy impact on intermodal development in seeking to manage public and private objectives and diverse agendas of federal, state and local agencies.

Grading: Letter Graded

MTM 215 - Transportation Planning and Project Development

3 unit(s)

Examines management of transportation planning and project development processes, including: regional and state system-wide planning; project-level planning; environmental review; obtaining governmental approvals and permits; contract management; and project management.

Prerequisite(s): MTM 201 or instructor approval.

Grading: Letter Graded

MTM 217 - Leadership and Management of Transportation Organizations

3 unit(s)

A study of the human resource aspects of managing transportation systems, including labor/management collaboration/negotiation and consultative employee relations programs. Builds skills in leadership and team building within the context of bringing about organizational change in a complex transportation system.

Grading: Letter Graded

MTM 226A - Transportation Emergency Management

3 unit(s)

Examines the role of emergency management within transportation agencies and the role of transportation and related resources in community-wide responses to emergencies disasters. Includes instruction in Standardized Emergency Management Systems (SEMS).

Grading: Letter Graded

MTM 226B - Transportation Security Management

3 unit(s)

Examines contemporary challenges to transportation security. Topics to be covered include: management of infrastructure challenges (such as tunnel, bridge, road and rail vulnerabilities) prevention of and response to theft, work place violence, disruptive terrorism, suicide and placement combing attacks, and their related protection strategies. Students will learn about federal and state grants for security, as well as regional transportation planning for disaster response planning.

Grading: Letter Graded

MTM 226C - Transportation Safety and Compliance Management

3 unit(s)

Examines contemporary challenges to transportation safety and regulatory compliance. Topics to be covered include the history and evolution of safety principles, developing and managing a safety culture, hazard identification and management, along with federal and state regulatory compliance and safety certification processes. Students will also be introduced to the federal rulemaking process and the role of the National Transportation Safety Board.

Grading: Letter Graded

MTM 236 - Managing Technology Innovations in Transportation

3 unit(s)

Management challenges posed by five technological trends: electrification, vehicle automation, connected vehicles and infrastructure, car sharing and ride sharing, and mobility as a service. Topics include: impacts on infrastructure, financing, and labor; managing technologies to support environmental, equity, and economic efficiency policy goals; and supporting collaboration between public agencies and private sector firms.

Grading: Letter Graded

MTM 245 - High-Speed and Intercity Rail: Planning & Design

3 unit(s)

Course introduces students to fundamental principles for managing the planning and design of high-speed and intercity rail projects. Students analyze the challenges and opportunities that high-speed and intercity rail services face in the U.S., given prevailing travel behavior patterns, land-use patterns, and funding sources. Topics include the interrelationship of high-speed rail with conventional intercity rail and urban public transportation, the roles of different levels of government in planning and design, and the delivery and governance of rail corridors and stations. The course takes an international perspective, drawing lessons from around the globe and applying these principles to the U.S. context.

Grading: Letter Graded

MTM 246 - High-Speed and Intercity Rail Operations/Engineering

3 unit(s)

Course introduces students to best practices for managing the engineering and operations of high-speed and intercity rail. Topics covered include day-to-day operational concerns such as customer experience,

service scheduling, and security management. In addition, the class covers strategic issues such as operating blended service that accommodates both passenger and freight service, managing public communications, and contracting approaches for both construction and operations.

Grading: Letter Graded

MTM 250 - Sustainable & Resilient Transportation Management

3 unit(s)

Analysis of the multidimensional relationship between transportation systems and major environmental problems such as climate change, air pollution, noise, diminished water and soil quality, and decreased biodiversity. Exploration of innovative strategies to achieve sustainable and resilient transportation systems, such as zero-emission and other new vehicle technologies, climate resilience and adaptation plans, habitat conservation plans, principles of climate justice, and environmental impact assessment and monitoring. Case studies from across the globe that examine the interplay between sustainable management practices and technological, political, and societal factors.

Grading: Letter Graded

MTM 260 - Project Management in Transportation

3 unit(s)

Reviews project management, program, and portfolio practices defined by the Project Management Institute (PMI) and the International Organization for Standardization (ISO). Examines how those practices apply to transportation and compares project management practices in the US transportation industry to other industry sectors and to general practices in other countries.

Grading: Letter Graded

MTM 283 - MSTM Capstone - Project Design

3 unit(s)

Provides the first part of a culminating experience in which students design and carry out an individual, comprehensive policy or program evaluation. Students conduct background research and develop a Policy or Program Evaluation Proposal that demonstrates their capacity to do independent research, analysis, and writing about a complex transportation management problem.

Prerequisite(s): Completion of 21 units towards the Master of Science in Transportation Management degree

Grading: Credit/No Credit/Incomplete.

MTM 290 - MSTM Capstone - Evaluation Report

3 unit(s)

Provides the second part of a culminating experience in which students design and carry out an individual, comprehensive policy or program evaluation. Students complete a Policy or Program Evaluation following the proposal design they developed in MTM 283. The final report demonstrates their capacity to do independent research, analysis, and writing about a complex transportation management problem.

Prerequisite(s): MTM 283

Grading: Mandatory Credit/No Credit/RP

MTM 297 - Special Topics in Transportation Management

3 unit(s)

Special topics to supplement regularly programmed elective course. Topics can include, but are not limited to, special skills development, labor relations, information systems, legal environment, public policy, and urban planning.

May be repeated for credit when topic changes.

Prerequisite(s): Graduate standing and prerequisite courses as may be specified.

Grading: Letter Graded.

University Studies

UNVS 15 - Statway: Statistics-Concepts & Methods

3 unit(s)

Concepts and methods of statistics with an emphasis on data analysis. Topics include methods for collecting data, graphical and numerical descriptive statistics, correlation, simple linear regression, basic concepts of probability, confidence intervals and hypothesis tests for means and proportions, and chi-square tests.

Lecture 1 hour / Activity 4 hours

Satisfies Completion with a grade of C- or better satisfies the GE Area B4: Mathematics/Quantitative Reasoning requirement.

Grading: Letter Graded

Cross-listed with MATH 15. Undergraduate Education is responsible for scheduling.

UNVS 75 - Fundamentals of Leadership and Career Accelerator

3 unit(s)

This course is a foundational course designed to begin preparing students in their sophomore year or first year of transfer to SJSU to practice the leadership habits of mind and workplace skills needed to thrive in 21st century workplaces. Given the increasingly competitive, and globalized job marketplace, this course enables participants to cycle through rounds of interactive experiences and practice to acquire "hard" and "soft" skills needed to succeed. Students will apply these skills in real-life leadership situations and build meaningful networks of peers and adults, all while activating their personal assets and deepening their sense of self and community.

Misc/Lab: 2 hours lecture/ 2 hours lab

Prerequisite(s): ENGL 1A

Grading: Letter Graded

Cross-listed with SCI 75. Science is responsible for scheduling.

UNVS 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

UNVS 95 - Special Topics in Student Leadership Development

1 unit(s)

University 95 is for students selected as staff for San Jose State University's Summer Transition Programs (e.g., Summer Bridge Resident Assistants and Academic Coaches and Spartan Scholars Program Community Assistants and Academic Coaches). Through a series of lectures, project-based activities, and required readings, students will explore both theoretical and practical elements of leadership.

Course may be repeated for credit for up to 3 units.

Grading: Letter Graded

UNVS 95B - First Year Experience- Academic Success

1-2 unit(s)

University 95 is a series of lectures, project-based activities, and required readings to promote academic success. This course introduces students to university faculty, campus administrators, and campus resources. It also provides students with a wide range of information regarding various institutional academic expectations, university policies and procedures, and practical study skills to prepare them for the successful completion of courses at SJSU.

Grading: Letter Graded

UNVS 96D - Academic Skill Development

1 unit(s)

Development of academic skills to help students succeed in college.

Grading: Credit/No Credit/No Degree Credit

UNVS 101 - Leadership and Career Accelerator

3 unit(s)

Prepares students for the increasingly competitive, globalized job marketplace. Through online, peer learning, interactive experiences, and reflection, students build meaningful networks, discover their innate leadership, and cultivate the hard and "soft" skills and habits of mind needed to thrive in twenty-first century workplaces and make positive impact through their careers upon graduation. Aimed at students in their sophomore or junior year or first year of transfer, though all students of all majors can participate.

Lecture 2 hours/lab 3 hours.

Prerequisite(s): ENGL 1A or ENGL 1AS with a grade of "C-" or better or complete GE Area A2 with a grade of "C-" or better.

Grading: Letter Graded

Note(s): Why take UNVS 101?

Cross-listed with SCI 101. Science is responsible for scheduling.

UNVS 120 - Conceptualizing Complex Problems

3 unit(s)

Introduction to the theme of the Interdisciplinary Studies Minor program. Theme is examined from interdisciplinary perspectives through presentations by a faculty team along with field trips or visits from experts, organizations, and sites. Final public presentation to campus and community.

Prerequisite(s): Must be a declared Interdisciplinary Studies Minor.

Grading: Letter Graded

High Impact Practice: Learning Community

UNVS 121 - Social Problems Topics

3 unit(s)

In-depth study and exploration of the Interdisciplinary Studies Minor Cohort theme. Student teams do field research or apply ideation and design thinking techniques to identify an issue for further research. Final public presentation to campus and community.

Prerequisite(s): Must be a declared Interdisciplinary Studies Minor.

Grading: Letter Graded

High Impact Practice: Learning Community

UNVS 122 - Steps in Real-World Problem Solving

3 unit(s)

Student teams work in-depth on group projects. Final projects and reflections address the problem directly and propose advocacy campaigns, curriculum or policy changes, and other types of solutions. Final public presentation to campus and community.

Prerequisite(s): Must be a declared Interdisciplinary Studies Minor.

Grading: Letter Graded

High Impact Practice: Learning Community

UNVS 123 - HonorsX Explorations

3 unit(s)

In-depth study and exploration of the Interdisciplinary Studies Cohort theme. The topic for the seminar will change each semester. Final public presentation to campus and community.

Prerequisite(s): Must be a declared Interdisciplinary Studies Minor.

Grading: Letter Graded

High Impact Practice: Learning Community

UNVS 124 - HonorsX Research or Practicum Experience

3-6 unit(s)

Students work on well-defined research projects with faculty, or with community and corporate mentors. Requires pre-approval from the HonorsX director.

Prerequisite(s): Must be a declared Interdisciplinary Studies Minor.

Grading: Letter Graded

High Impact Practice: Learning Community

Sustainability Focused

UNVS 125M - McNair Research Colloquium

3 unit(s)

Course is designed to assist students in the SJSU McNair Scholars Program to prepare for graduate study at the doctoral level. Various faculty will lecture on topics including research methodology, research writing, protocol for presenting research results conferences, graduate school experiences and academic expectations.

Prerequisite(s): Students must be accepted in the SJSU McNair Scholars Program.

Grading: Credit/No Credit

UNVS 180 - Individual Studies

1-4 unit(s)

Special topics or projects by arrangement with instructor.

Grading: Credit/No Credit

UNVS 190 - University Internship

1-4 unit(s)

Supervised placement in student support services for advanced students.

Grading: Credit/No Credit

UNVS 195H - Interdisciplinary Research Practicum

3 unit(s)

This practicum will integrate the methods of at least two disciplines to conduct basic and applied research. Undergraduate students will have hands-on experiences working with faculty from different disciplinary traditions in real research projects.

Prerequisite(s): Upper Division Standing

Grading: Credit/No Credit

UNVS 199 - Orientation Leadership Studies

3 unit(s)

This class is designed for students selected by Student Affairs to serve as SJSU Orientation Leaders. Students will learn theoretical/practical aspects of leadership, and receive training in university policies/procedures. Curriculum will apply to students' leadership experiences.

Prerequisite(s): Apply and be selected (fall semester), 2.0 GPA, upper division standing or instructor consent.

Grading: Letter Graded

UNVS 1290R - Culminating Experience Supervision

1 unit(s)

Continued work on thesis or project writing.

Course may be repeated for credit for up to 20 units.

Prerequisite(s): Outstanding RP grade in a preceding semester in a project or thesis class.

Grading: Credit/No Credit/No Degree Credit

Note(s): No Degree Credit

Urban and Regional Planning

URBP 92 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

URBP 101 - The City

3 unit(s)

History and organization of the city, emphasizing contemporary issues and strategies for influencing urban policy.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

College of Humanities and the Arts is responsible for scheduling.
Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 103 - Local Government and Politics

4 unit(s)

Offers a theoretical and practical study of local politics and government. The structure, role, and functions of city and county governments are examined. Students gain knowledge of the resources and skills required for effective citizenship in their communities.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with POLS 103. Political Science is responsible for scheduling.

URBP 110 - Urbanization in the Global South

3 unit(s)

This course explores issues and debates that relate to urbanization in the developing world. Students will gain a general understanding of the concept of urbanization in the developing world, and what are some of the issues, challenges, and policy responses found in these urban environments.

Prerequisite(s): Completion of core GE. Upper division standing.

Pre/Corequisite(s): 100W.

Grading: Letter Graded.

Cross-listed with GEOG 110. Geography is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 120 - Intro to Housing Economics and Policy

4 unit(s)

Historic and policy aspects of housing, focusing on housing characteristics and public sector intervention. Topics may vary. Course may be repeated for credit when topic changes.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Note(s): Offered only occasionally.

College of Humanities and the Arts is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 125 - Urban Anthropology

3 unit(s)

Anthropological theories and methods in analyzing the global effects of urban growth. Relevance of anthropological approach in understanding our local multiethnic metropolitan area.

Prerequisite(s): ANTH 11 or instructor consent.

Grading: Letter Graded

Cross-listed with ANTH 125. Anthropology is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 133 - Introduction to Social Issues in Planning

4 unit(s)

Contemporary social issues related to urban and regional planning. Assessment of community social needs and resident planning. Focus on ethnic areas such as African, Asian and Mexican American neighborhoods.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with AFAM 133 Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 136 - Introduction to Land Use Planning

4 unit(s)

Land use and facilities planning practices in the context of American cities, emphasizing interrelationships between various land uses and public facilities and service requirements. Study of the role of public law in addressing urban growth and environmental change issues.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 136. Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 142 - Introduction to Environmental Planning

4 unit(s)

Environmental sustainability and its application to local planning. Review of regulatory tools and legislation that underlie most environmental planning and current environmental planning topics. Course may be repeated for credit when topic changes.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 142. Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 143 - Intro Private Development and Planning

3 unit(s)

Introduction to the real estate development process from preliminary product analysis through planning, construction, and marketing.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

URBP 145 - Race, Policy, and Urban Cities

4 unit(s)

Effects of public policy decisions on inner city populations. Implications of urban planning processes for

differential consumption costs of public goods and services.

Prerequisite(s): Upper division standing.

Grading: Letter Graded

Cross-listed with AFAM 145. African American Studies is responsible for scheduling.
Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 148 - Introduction to Spatial Visualization Technology in Urban Planning

1-4 unit(s)

Lab-based course in digital visualization for urban spatial representation using industry standard software such as Adobe Photoshop, Adobe Illustrator and Trimble Sketch-Up.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with DSGN 148. Urban and Regional Planning is responsible for scheduling.

URBP 150 - Introduction to Municipal Finance

4 unit(s)

An introduction to the theory and practice of municipal finance. Topics include public goals and externalities, the function of the budget, sources of revenues, finance tools, expenditure types, the planning programming-budgetary system (PPBS), and methods of project evaluation.

Prerequisite(s): Upper Division Standing

Grading: Letter Graded

URBP 151 - Introduction to Urban Design

4 unit(s)

Principles, goals and methods of the urban design process. Urban design as the comprehensive treatment of the human-made environment.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with DSIT 151. Urban and Regional Planning is responsible for scheduling.
Sustainability Related - SDG 11: Sustainable Cities and Communities

URBP 152 - Introduction to Urban Design Studio

4 unit(s)

Introduction to the analysis of alternative urban design policies to direct urban form development. Course may be repeated for credit when topic changes.

Misc/lab: Activity 6 hours.

Prerequisite(s): URBP 151 or instructor consent.

Grading: Letter Graded

Cross-listed with DSIT 152. Urban and Regional Planning is responsible for scheduling.
Sustainability Related - SDG 11: Sustainable Cities and Communities

URBP 156 - Introduction to Local Transportation Planning

4 unit(s)

Examination of transportation planning issues addressed at the neighborhood and municipal level such as bicycle and pedestrian planning, traffic calming, and parking policy.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 156. Urban and Regional Planning is responsible for scheduling.
Sustainability Related - SDG 9: Industry, Innovation and Infrastructure

URBP 163 - Twentieth Century Urban Design

3 unit(s)

History of urban design since 1900, covering theories and practices of urban design in the industrialized world; includes Camillo Sitte, Le Corbusier and Frank Lloyd Wright.

Prerequisite(s): ARTH 70B or URBP 151 or instructor consent.

Grading: Letter Graded

Cross-listed with ARTH 163. Art and Art History is responsible for scheduling.
Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 169 - Introduction to Social Media in Planning

1-4 unit(s)

An introduction to social media tools and their use in urban planning, with a particular emphasis on public participation.

Prerequisite(s): Upper division standing

Grading: Letter Graded

Cross-listed with ENVS 169. Urban and Regional Planning is responsible for scheduling.
Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 175 - Urban Studies Topics

1-4 unit(s)

In depth examination of selected topics. Consult schedule of classes for current offerings. Course may be repeatable for credit with different topic.

Course may be repeated for credit for up to 8 units.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

URBP 178 - Intro to Regional Transport Planning

4 unit(s)

Principles and concepts relevant to transportation planning and policy at the regional level, such as historical and current regional transportation planning processes, the relationship between regional travel demand and transportation infrastructure, and travel demand modeling practices.

Prerequisite(s): Upper division standing

Grading: Letter Graded

Cross-listed with ENVS 178. Urban and Regional Planning is responsible for scheduling.

Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

URBP 179A - Fundamentals of GIS for Urban Planning

4 unit(s)

Exploration of Geographic Information Systems (GIS) area analysis techniques for spatial information management in local government: planning support systems, needs analysis, envisioning neighborhoods utilizing multiple maps, charts, photos and the Internet. Course may be repeated for credit when topic changes.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 179A. Urban and Regional Planning is responsible for scheduling.

Sustainability Related - SDG 11: Sustainable Cities and Communities

URBP 179B - Advanced GIS for Urban Planning

4 unit(s)

Continued study of how geographic information systems (GIS) can be applied to urban and regional planning topics.

Prerequisite(s): URBP 179A or instructor consent.

Grading: Letter Graded

URBP 180 - Individual Studies

1-4 unit(s)

Individual work on special topics by arrangement.

Prerequisite(s): Instructor consent and department chair approval.

Grading: Credit/No Credit

URBP 185 - Environmental Impact Analysis

4 unit(s)

Current environmental impact reports subjected to critical review; determination of alternative procedures and mitigating opportunities; extensive field analysis and practice.

Misc/Lab: Lecture 3 hours/lab 2 hours.

Prerequisite(s): ENVS 1, ENVS 124 or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 185. Environmental Studies is responsible for scheduling.

URBP 190 - Advanced Environmental Impact Assessment

4 unit(s)

Advanced work in the field of environmental impact assessment. Analysis of EIA documents for regulatory adequacy, consistency with local planning documents and technical accuracy.

Misc/Lab: Lecture 3 hours/lab 2 hours.

Prerequisite(s): ENVS 185 or instructor consent.

Grading: Letter Graded

Cross-listed with ENVS 190. Environmental Studies is responsible for scheduling.

URBP 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

URBP 200 - Seminar on Urban and Regional Planning

4 unit(s)

Overview of the historical development of urban and regional planning in the United States, as well as prominent theories of urban planning practice. Emphasizing the connection between the theoretical and historical material and current planning practice.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 204 - Quantitative Methods

4 unit(s)

Urban research design, measurement, selected statistical research tools and introduction to computer processing. Extensive treatment of survey research.

Grading: Letter Graded

URBP 205 - Private Development and Urban Planning

3 unit(s)

Study of the entire process of private development from preliminary product analysis through planning, construction and marketing.

Grading: Letter Graded

URBP 206 - Market Analysis, Appraisal, & Finance of Real Estate Development

3 unit(s)

Students will be taught the real estate capital markets and the mix of the necessary financing sources required of developments. Students will evaluate criteria used by developers, real estate lenders and capital providers looking to minimize risk and maximize returns on real estate investments.

Grading: Letter Graded

URBP 207 - Real Estate Development Business and Planning

3 unit(s)

This course will introduce students to the California planning system, real estate development entitlement process, and contemporary issues in urban and regional planning.

Grading: Letter Graded

URBP 208 - Urban Real Estate Development Studio

3 unit(s)

This is a capstone studio course designed to immerse students in the real world of urban property development. Students will explore this world by taking part in a major mock-development project of an actual site in the San Francisco Bay Area.

Prerequisite(s): URBP 205 and URBP 206 or instructor consent.

Grading: Letter Graded

URBP 214 - Introduction to Public Management for Urban Planners

3 unit(s)

A study of current principles and practices of effectively managing public service organizations and urban planning. Emphasis on critical thinking, project management, and implementation processes considering urban planning.

Prerequisite(s): URBP 204 or equivalent or instructor consent.

Grading: Letter Graded

URBP 223 - Housing Economics and Policy

4 unit(s)

Overview of the housing situation in the United States; examination of the theory of housing markets and framework for analyzing housing policies; in-depth study of the problem of affordable housing and critical examination of the steps that the public, private, and non-profit sectors have taken to alleviate the problem.

Grading: Letter Graded

Sustainability Focused - SDG 1: No Poverty

URBP 225 - Land Use Planning and Law

4 unit(s)

Study of contemporary growth and land use management techniques used by local, state and federal governments. Examination of the role of public law in addressing urban growth and environmental change issues, and the legal aspects of preparing and administering planning controls and incentives.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 226 - Regional Transportation Planning

4 unit(s)

Overview of the evolution of key transportation institutions and policies at the metropolitan, state, and federal levels. Assessment of the current challenges facing regional transportation systems and evaluation of different planning and policy approaches proposed to improve the performance of regional transportation systems.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

URBP 228 - Urban Community Development

4 unit(s)

The role, objectives and policies of the urban community development process; the social, economic, political and physical implications underlying community development programs; and relationships of these programs to comprehensive urban planning.

Grading: Letter Graded

URBP 231 - Urban Design in Planning

4 unit(s)

Urban design as part of the planning process; contemporary and historic urban design thought and ways of improving design quality in the urban environment.

Grading: Letter Graded

URBP 232 - Urban Design Studio

4 unit(s)

Through fieldwork and laboratory assignments, the student applies urban design theories, methods and principles to a current urban development issue.

Prerequisite(s): URBP 231 or instructor consent.

Grading: Letter Graded

URBP 233 - Social Issues in Planning

4 unit(s)

Multi-disciplinary study of the principles that guide the growth of a community so all members have equal access to the benefits of living in an urban environment. The course examines the coordination of citizen groups and government bodies to secure needed social services and facilities, champion initiatives that improve quality of life in our community, and engage issues important to underrepresented groups.

Grading: Letter Graded

Sustainability Related - SDG 11: Sustainable Cities and Communities

URBP 234 - Field Study Seminar

1 unit(s)

Discussion and analysis of experience in the planning field under internship programs. May not be counted towards the Master of Urban Planning program of study. Repeatable for credit with approval of the Graduate Student Advisor.

Prerequisite(s): Instructor consent and enrollment in the Master of Urban Planning degree program.

Grading: Letter Graded

URBP 236 - Urban and Regional Planning Policy Analysis: Tools and Methods

4 unit(s)

Analytical approaches to explain and evaluate the public policy making process with particular reference to urban and regional planning and development. Apply quantitative methods such as extrapolation techniques, population and economic projection models, and spatial interaction models for policy analysis.

Satisfies GWAR: Graduation Writing Assessment Requirement.

Grading: Letter Graded

Note(s): This course satisfies graduate-level GWAR in this master's program.

URBP 240 - Environmental Planning

4 unit(s)

Examination of the fundamental concepts and issues related to urban environment that planners face. Focus on land use and open space planning, planning and use of urban resources, interactions of urban residents and the physical environment, and the role of government in formulating appropriate policies and strategies.

Grading: Letter Graded

Urban and Regional Planning is responsible for scheduling.
Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 241 - Planning Sustainable Cities

2 unit(s)

An overview of urban sustainability covering topics such as the origins of urban sustainability, tools for sustainability planning, global dimensions of sustainability (including different approaches to planning across world regions), and visions for creating sustainable futures.

Course may be repeated for credit for up to 6 units.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 248 - Spatial Visualization Tech in Urb Plan

1-4 unit(s)

Lab-based course in digital visualization for urban spatial representation using industry standard software such as Adobe Photoshop, Adobe Illustrator and Trimble Sketch-Up.

Grading: Letter Graded

Cross-listed with DSGN 248. Urban and Regional Planning is responsible for scheduling.

URBP 250 - Urban Planning Public Finance

4 unit(s)

An investigation of both the theory and practice of local public finance with emphasis on applications relevant to urban and regional planning. Topics include: public goals and externalities; the function of the budget; sources of revenue and expenditure; the planning programming-budgetary system (PPBS); methods of project evaluation; and traditional as well as innovative methods of public finance including property tax, user fee, impact fee, tax increment financing and use of special districts.

Grading: Letter Graded

URBP 255 - Urban and Regional Growth Management

4 unit(s)

Extensive study of causes, consequences and costs of sprawl; study of growth management and smart growth programs at the state, regional and local level, including the rationale, techniques, and economic, political, and organizational implications.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 256 - Sustainable Transportation Planning

4 unit(s)

Examination of transportation planning issues addressed at the neighborhood and municipal level such as bicycle and pedestrian planning, traffic calming, and parking policy, with a focus on promoting sustainable communities.

Course may be repeated for credit for up to 9 units.

Grading: Letter Graded

Sustainability Focused - SDG 9: Industry, Innovation and Infrastructure

URBP 260 - Environmental Planning Topics

4 unit(s)

In-depth examination of selected topics specifically related to environmental planning. Consult department for current offerings. Course may be repeated for credit when topic changes.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

Sustainability Focused - SDG 11: Sustainable Cities and Communities

URBP 275 - Urban Planning Topics

1-4 unit(s)

In-depth examination of selected topics introduced in the core seminars for the Master of Urban Planning degree. Consult schedule of classes for current offerings. Course may be repeated for credit when topic changes.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

URBP 275G - Geographic Information Systems Overview: Urban Planning Applications

1 unit(s)

An overview of Geographic Information Systems with a focus on applications to urban planning, including demographic data analysis, land use mapping, cartographic techniques and methods for determining the most appropriate display of quantitative data for a variety of intended audiences.

Grading: Letter Graded

URBP 276 - Social Media in Planning

1-4 unit(s)

An overview of social media tools and their use in urban planning, with a particular emphasis on public participation.

Grading: Letter Graded

URBP 278 - Introduction to GIS for Urban Planning

4 unit(s)

Examination of geographic information systems (GIS) applications to urban and regional planning topics. Course may be repeated for credit when topic changes.

Course may be repeated for credit for up to 8 units.

Grading: Letter Graded

URBP 279 - Advanced GIS for Urban Planning

4 unit(s)

Further examination of advanced geographic information systems (GIS) applications to urban and regional planning topics

Course may be repeated for credit for up to 8 units.

Prerequisite(s): URBP 278 or instructor consent.

Grading: Letter Graded

URBP 280 - Planning Research Topics

1-4 unit(s)

In-depth examination of selected planning research topics introduced in core seminars for the Master of Urban Planning degree, such as the social and environmental impacts of planning policies.

Course may be repeated for credit for up to 12 units.

Grading: Letter Graded

URBP 292 - International Program Studies

1-6 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

URBP 295 - Capstone Studio: Community Planning

6 unit(s)

Through fieldwork and laboratory assignments, the student applies theories and techniques of analysis to identify the assets, problems, and opportunities of an urban community.

Prerequisite(s): Instructor consent.

Grading: Letter Graded

URBP 297P - Planning Report Preliminary Proposal

1 unit(s)

Advanced research and proposal writing. Students conduct background research and develop a preliminary research proposal that demonstrates their capacity to do independent research, analysis, and writing about a complex planning problem.

Grading: Letter Graded

URBP 298A - Special Study: Planning Report

3 unit(s)

Advanced research and report writing. Students develop a plan and complete the initial research to write a planning report that demonstrates their capacity to do independent research, analysis, and writing about a complex planning problem.

Prerequisite(s): Graduate Adviser approval. Passage of URBP 297P with a grade of B or better.

Grading: Mandatory Credit/No Credit/RP

URBP 298B - Special Study: Planning Report Completion

3 unit(s)

Advanced individual research and report writing. Students work with a faculty advisor to complete a professional planning report that demonstrates their capacity to do independent research, analysis, and writing about a complex planning problem.

Prerequisite(s): Passage of URBP 298A and Graduate Student Advisor approval.

Grading: Mandatory Credit/No Credit/RP

Vietnamese

VIET 1A - Elementary Vietnamese

4 unit(s)

Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Grading: Letter Graded

VIET 1B - Elementary Vietnamese

4 unit(s)

Continuation of VIET 1A. Basic skills and structure of the language in the context of culture.

Satisfies C2: Humanities.

Prerequisite(s): VIET 1A or equivalent.

Grading: Letter Graded

Women, Gender and Sexuality Studies

WGSS 10 - Women, Gender, and Sexuality Studies

3 unit(s)

Interdisciplinary introduction to core concepts and analytical tools addressing the diversity of human experience cross cut by gender, sexuality, embodiment, and class location. Students will become familiar with key contemporary and historical debates in both global and local contexts.

Satisfies D: Social Sciences.

Grading: Letter Graded.

WGSS 20 - Women of Color in the U.S.

3 unit(s)

Constructs knowledge of the historical and contemporary experience of women of color. Focuses on Native American, African American, Latina, and Asian American women and considers contributions they have made to the shaping of the nation.

Satisfies D: Social Sciences.

Grading: Letter Graded.

Sustainability Focused - SDG 5: Gender Equality

WGSS 92 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad and Away programs.

Grading: Mixed Grading

WGSS 101 - Sex, Power, and Politics

3 unit(s)

Multidisciplinary introduction to traditional and new images, roles, experiences, ethnic similarities and differences, and contemporary problems of American women.

Satisfies SJSU Studies S: Self, Society & Equality in U.S.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

WGSS 102 - The Global Study of Women

3 unit(s)

Survey of literature on the interaction of gender and forces of globalism.

Satisfies SJSU Studies V: Cultures and Global Understanding.

Prerequisite(s): Completion of Core General Education and upper division standing are prerequisites to all SJSU studies courses. Completion of, or co-registration in, 100W is strongly recommended.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

WGSS 107 - Psychology of Women

3 unit(s)

Sex-role development of women in terms of bio-social factors involved in intellectual and personal-emotional functions. Psychological theory and research.

Prerequisite(s): PSYC 1.

Grading: Letter Graded

Cross-listed with PSYC 107. Psychology is responsible for scheduling.

WGSS 112 - Women in the Global Economy

3 unit(s)

Women's participation in the economy, US and internationally: paid employment, consumption, subsistence labor, reproduction, volunteerism. It connects daily life activities with international economic trends, with particular attention to race, class, implications for families and strategies for equity.

Prerequisite(s): WGSS 10, WGSS 20, WGSS 101 or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

WGSS 114 - Politics of Mothering and Reproduction

3 unit(s)

Explore contemporary definitions and values inscribed in issues pertaining to mothers and reproduction. It will be built upon three literatures: discourses of law and legality, discourses of nature and science, and discourses based in feminist thinking.

Prerequisite(s): Upper Division standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

WGSS 120 - Special Topics in Women's Studies

3 unit(s)

Focus announced in the schedule of classes. Repeatable for credit with program coordinator approval.

Prerequisite(s): WGSS 10, WGSS 20, WGSS 101 or instructor consent.

Grading: Letter Graded

WGSS 121 - Philosophy and Feminism

3 unit(s)

A philosophical examination of writings that deal with issues of special concern to women, with emphasis on feminist writings.

Prerequisite(s): 3 units of philosophy or upper division standing.

Grading: Letter Graded

Cross-listed with PHIL 121. Philosophy is responsible for scheduling.

Sustainability Focused - SDG 5: Gender Equality

WGSS 131 - Gender, Sexuality, and Religion

3 unit(s)

Women's roles and gendered categories within diverse religions. Feminist critiques, reforms, and creations of religious institutions. The political and feminist dimensions of women's religious experience.

Understanding the roles of sexuality in religion.

Prerequisite(s): Upper-division standing or instructor consent.

Grading: Letter Graded

Cross-listed with RELS 131. Humanities is responsible for scheduling.

Sustainability Related - SDG 5: Gender Equality

WGSS 135 - Trans Studies: Identities, Embodiment, & Politics

3 unit(s)

Introduction to the field of transgender studies. A look at the present moment of transgender experience and embodiment through the lenses of history, science, institutions, cultural production, and activism.

Explores the past and future of trans, transgender, intersex, nonbinary, genderqueer, and transsexual people. Working with the assertion that "the personal is political" that emerged from Feminist of Color scholarship, course is also attentive to questions of race, ethnicity, class, sexuality, legal status, and ability, while introducing transgender identity and politics.

Prerequisite(s): Upper Division standing or instructor consent.

Grading: Letter Graded

WGSS 156 - Black Women's Writing

3 unit(s)

Comparative analysis of the meaning and developmental stages of womanhood for women of African ancestry as depicted in the fiction of women of African ancestry. Emphasis on the role of race and culture in shaping contemporary conceptions of womanhood among Black women.

Prerequisite(s): Upper division standing or instructor consent.

Grading: Letter Graded

Cross-listed with AFAM 156 / ENGL 156. African American Studies is responsible for scheduling.

WGSS 160 - Queering Gender, Race, and Class

3 unit(s)

Queer analysis of race and class diversity; social, political, and economic hierarchies of race, class, and gender in the U.S. Topics may include sexuality, racism, LGBT experience, the welfare system.

Grading: Letter Graded

WGSS 169 - Sexualities and the Body

3 unit(s)

This course explores the social construction of sexuality and the body from a feminist perspective. It investigates various aspects of sexuality and gendered bodies including identity, community, and social movements based on intersections of race, gender, sexuality, culture, and nation.

Prerequisite(s): Upper Division Standing or instructor consent.

Grading: Letter Graded

Sustainability Focused - SDG 5: Gender Equality

WGSS 175 - Sociology of Masculinities and Femininities

3 unit(s)

Examination and analysis of social construction of gender through interaction and social institutions. Explores gender-based identities and how intersections of gender, race, class, and sexuality shape men's and women's experiences. Examines theories of gender and gender-based social movements.

Prerequisite(s): SOCI 1.

Grading: Letter Graded

Cross-listed with SOCI 175. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.

Sustainability Focused - SDG 5: Gender Equality

WGSS 180 - Individual Studies

1-4 unit(s)

Individual work on special topics by arrangement.

Prerequisite(s): Minor or emphasis in women's studies.

Grading: Credit/No Credit

WGSS 182 - Women, Gender, and Sexuality in Literature

4 unit(s)

Representations of women, gender, and sexuality in literature, with special attention to the intersecting structures of race, ethnicity, and class.

Prerequisite(s): Upper division standing.
Grading: Letter Graded

Cross-listed with ENGL 182. English and Comparative Literature is responsible for scheduling.

WGSS 184 - Queer Literary Studies

4 unit(s)

Examination of queerness in literature, history, and culture. Explores queerness as it exists across historical contexts, tracing its manifestations in various literary genres and in other cultural artifacts such as film and television, including the ways gender and sexuality intersect with race, class, and ability, as they relate to identity formation and structures of power.

Prerequisite(s): Upper division standing.
Grading: Letter Graded

Cross-listed with ENGL 184. English and Comparative Literature is responsible for scheduling.

WGSS 189 - Feminist Perspectives on Gender and Religion

3 unit(s)

Contemporary feminist theories analyze premises of gender roles in religious cultures and variety of sexual expressions. Course will allow students understand the diversity of religious cultures and communities, in addition to how geographical, political, and social locations, like ethnicity and class affect the gender debate in religious perspectives.

Prerequisite(s): Upper division standing or instructor consent.
Grading: Letter Graded

Cross-listed with MDES 189. Sociology and Interdisciplinary Social Sciences is responsible for scheduling.
Sustainability Focused - SDG 5: Gender Equality

WGSS 190 - Internship

1-4 unit(s)

On-site experience with community or campus organization or other agency involved with women's issues. Individual and group advising augments the experiential learning. Repeatable for credit with program coordinator approval.

Prerequisite(s): WGSS 101 or instructor consent.
Grading: Credit/No Credit

WGSS 192 - International Program Studies

1-12 unit(s)

Study Abroad and Away transfer credit course. Study Abroad and Away provides students the opportunity to study abroad on long term programs (Exchange Programs, CSU International Programs, and International Student Exchange Programs) and short-term programs (Faculty-Led Programs and Summer School Abroad Programs) for academic credit, offering Alternative Break Programs for cultural immersion, and designing other globally focused opportunities. This course is designated as a placeholder course for Study Abroad

and Away programs.

Grading: Mixed Grading

Zoology

ZOOL 113 - Principles of Systematics

3 unit(s)

Students gain the understanding and skills needed to taxonomically study biodiversity, including the use of morphological and DNA sequence characters to examine phylogeny, and use of a range of biodiversity research techniques and tools.

Lab/Act: Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 113 / BOT 113 / ENT 113. Biological Sciences is responsible for scheduling.

ZOOL 114 - Functional Morphology

3 unit(s)

Develops understanding and skills needed to taxonomically study biodiversity, including the use of morphological and DNA sequence characters to examine phylogeny, and use of a range of biodiversity research techniques and tools.

Lecture 2 hours/Lab 3 hours.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of "C" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 114 / BOT 114 / ENT 114. Biological Sciences is responsible for scheduling.

ZOOL 115 - Invertebrate Zoology and Natural History

4 unit(s)

The evolution, distribution, structure, natural history and systematics of invertebrates other than insects.

Lecture 2 hours/lab-field trips 6 hours.

Prerequisite(s): BIOL 115 or BIOL 118 (with a grade of "C" or better). Must be a declared major in Biological Sciences; other majors with instructor consent.

Grading: Letter Graded.

ZOOL 116 - Vertebrate Evolution and Natural History

4 unit(s)

Origin, evolution, distribution and natural history of the vertebrates. Development, reproductive patterns,

anatomy, morphology, behavior, ecology and systematics.

Lecture 2 hours/lab 6 hours with several field trips.

Prerequisite(s): BIOL 118 (with a grade of "C" or better), or instructor consent. Must be a declared major in Biological Sciences; other majors with instructor consent.

Grading: Letter Graded

ZOOL 143 - Biogeography

3 unit(s)

Examination of the patterns of biodiversity over space and through time. Using data and models from a variety of sources including botany, zoology, ecology, evolutionary biology, paleontology, and geology, effects of isolation, elevation, and latitude are examined to understand spatial patterns of biodiversity.

Prerequisite(s): BIOL 31 or equivalent (with a grade of "C-" or better), or instructor consent. Must be a declared Biology Major (all).

Grading: Letter Graded

Cross-listed with BIOL 143 / BOT 143 / ENT 143. Biological Sciences is responsible for scheduling.
Sustainability Related - SDG 15: Life on Land

ZOOL 180 - Individual Studies

1-4 unit(s)

Advanced lab work in special fields. Course is repeatable for credit.

Repeatable for credit.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Credit/No Credit

ZOOL 186 - Senior Thesis

2-4 unit(s)

Advanced laboratory or field research under supervision of faculty member, culminating in a senior thesis.

Prerequisite(s): Instructor consent. Must be a declared Biology Major (all).

Grading: Credit/No Credit